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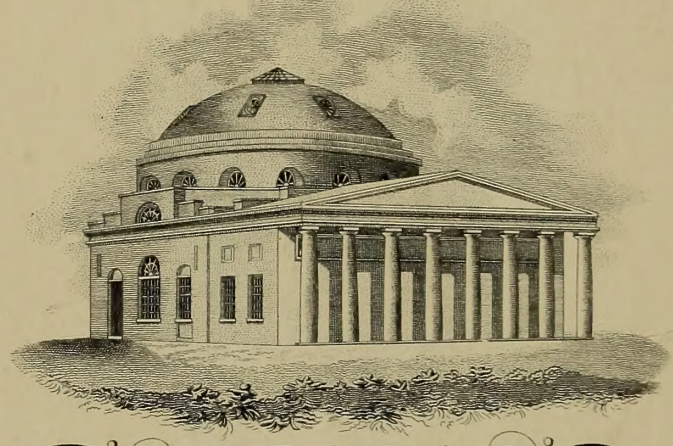

University of Maryland

University of Maryland Theses

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UNIVERSITY OF MARYLAND

THESES

1869 (a)

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AN

Inaugural Dissertation

ON

Digestion

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

George W. Davis.

Of

Maryland.

22

Session of 1868–9.

WM 16954

Digestion.

Digestion is that process by which food is reduced to such a condition that the nutritious material can be separated from it and taken up by the blood vessels.

In Man, the food is mostly solid or semi-solid and requires to be liquified before it can be absorbed. This liquifaction takes place in the "alimentary canal", which is a muscular tube, lined with mucous membrane, running through the body, from the

mouth to the anus, in this tube the food meets with different fluids, secreted by the mucous membrane and glands in its vicinity: as these fluids differ from each other, so does each one exert its peculiar action on a particular class of substances of which the food consists, those parts which become liquified as they pass down the intestine are removed by absorption and taken into the bloodvessels, while the indigestible matter, and refuse

of the secretions, pass from the intestine under the form of feces.-

The alimentary canal is about thirty feet in length, divided into different cavities, which communicate with each other, having received different names: The first of these is the Mouth where the food is taken and where it undergoes simultaneously Mastication and Insalivation. The Mouth is of an irregular shape. It is bounded

in front by the lips; laterally by the cheeks; above, by the hard palate and teeth of the upper jaw, below, by the tongue, the mucous membrane stretched between this organ and the inner surface of the jaw and by the teeth of the lower jaw, behind, by the soft palate and fauces.

Mastication is performed by the teeth, which are adapted to cutting and grinding the food so that it may be acted upon by the juices

of the Mammalia the teeth of the adult are thirty-two in number, placed in the alveolar process of the upper and lower jaws, sixteen in each jaw; they are suited for a mixed diet, consisting of both animal and vegetable food. The Incisors, or front teeth have a cutting edge, while the Molars are adapted to grinding, but as most of the hard articles of food are softened by cooking they do not require a great amount of trituration.

The act of mastication is a mechanical one, caused by the contact of solid food with the interior of the mouth, producing contractions of the muscles, so that the food is separated between the teeth by the movements of the lower jaw. While the food is undergoing Mastication, it is at the same time brought in contact with the Saliva, the first of the digestive fluids. As Saliva is obtained from the buccal cavity it is a

colorless, slightly acid and alkaline fluid, with a specific gravity of 1005. It contains about 995 parts of water, the remainder of which is chiefly organic matter and salts with epithelium. It is composed of four different fluids which differ from each other in their chemical properties the first of these is the Parotid, which is secreted by the parotid gland. It is the largest gland connected with the secretion of the Saliva. It varies in weight from

half an ounce. To the ounce;
it lies upon the side of the
face; below and in front of
the ear; beneath the skin;
its duct is called the duct of
Steno, being about the size
of a crow quill, and two inches
and a half in length which
perforates the cheek near its
inner surface by a small ori-
fice opposite the second mo-
lar tooth of the upper jaw.
The Parotid saliva has been
obtained in a state of purity
from some of the lower an-
imals; it is a clear, limpid

and watery, not viscid, and slightly alkaline fluid.

The second secretion is that of the submaxillary gland. Its weight is about two drachms, and is situated on the internal side of the inferior maxillary bone. Its duct is Wharton's, it is about two inches in length, terminating by a small orifice at the side of the frænum, beneath the tongue. The Submaxillary saliva differs from the Parotid by being more viscid.

The third of the salivary

glands is the sublingual, and it is the smallest of the three. It is situated beneath the mucous membrane of the floor of the mouth, under the tongue, close to the symphysis. Its weight is about one drachm, its ducts are about eight or ten in number, and open into, or near Wharton's duct. Its saliva is also alkaline, colorless and more viscid than that of the Submaxillary. The fourth section is of the Follicles of the mouth; they are small glands beneath

the mucous membrane, their secretion is acid, and much more viscid than either of the salivary glands.

The Saliva is most abundantly secreted during mastication. It has been found to be most abundantly secreted on the side on which the food is being masticated. Saliva has the power of converting boiled starch into sugar, but food does not remain long enough in the mouth to be affected by it, and that power is lost when it becomes

mixed with Gastric juice. Its action is to moisten the food facilitate its mastication and lubricate the mass so it may pass with ease down the Œsophagus. Its flow is most abundant during the mastication of hard substances. The odor of nutritious food, when the appetite is excited will also "make the mouth water". The Parotid secretion is most useful in Mastication, while the more glairy secretion lubricate the triturated mass. After the food is triturated,

and moistened, in the mouth it is ready for the action of deglutition. From the mouth it is carried backward into the Pharynx, that portion of the alimentary canal which is situated behind the mouth. It is about four inches and a half in length, and extends from the occiput to the Œsophagus. As the food is carried backward, it passes between the tongue and palate, till it has passed the anterior arch of the fauces; by the aid of the tongue, the palate and

contraction of the Pharynx, the
larynx is elevated and the ri-
ma glottidis closed by the Ep-
iglottidis being pressed over it,
while the food enters the E-
sophagus. The Esophagus ex-
tends from the Pharynx to
the Stomach. It is about nine
inches in length, it joins
the Pharynx opposite the fifth
cervical vertebra, and descends
along the front of the Spine,
passing through the Diaphragm
into the Stomach opposite
the tenth dorsal vertebra.
The food is carried through

it into the Stomach by its involuntary contractions.

The Stomach is the principal organ of digestion, It is the largest part of the alimentary Canal, It is situated in the left hypochondriac, the Epigastric, and part of the right hypochondriac regions immediately behind the anterior wall of the abdomen, below the liver and Diaph. ragm. It is of an irregular form being curved or bent with its Largest extremity turned to the left which is

its cardiac portion, extending two or three inches to the left of the entrance of the Oesophagus. The Pyloric or lesser end is anterior and inferior to it, and joins with the Intestine. Its size varies considerably in different subjects. It is usually longer in Females, on account of tight lacing. When moderately distended it is about twelve inches in length and four in its vertical diameter. It holds from five to ten pints. Its muscular membrane is thick, and when contracted is thrown into numerous folds.

The Gastric juice, the digestive fluid of the Stomach is secreted by glands beneath the mucous membrane. It is a colorless, slightly acid fluid with a specific gravity of 1010. having a distinctly acid reaction. It contains about 975 parts of Water, 15 of organic matter and Lactic acid, about 4 parts, the remainder consisting principally of the different salts.

Gastric juice, like the Saliva is secreted in any considerable quantity only during the intervals of recently ingested food.

during the intervals of digestion the stomach contains a small quantity of neutral or alkaline mucous. It has been ascertained that the secretion of the stomach does not affect all articles of food, but only the albuminous or organic substances. The fatty matters are only melted by heat, and the starchy substances to a certain extent by heat and moisture; while the albuminous substances are at once liquefied by the digestive fluid and converted into

albuminose.

When the Bolus enters the Stomach it is exposed to the peristaltic movements of the organ, which are caused by the alternate contractions and relaxations of the circular and longitudinal fibres of its muscular coat; these movements commence when the food enters the Stomach, and the Gastric juice begins to flow. The contractions and relaxations take place in such a manner that the food is carried to every part of the Stomach and

continues so long as any food remains in it. By this churning motion the food is thoroughly mixed with the Gastric juice, the liquid portions at the same time being removed, toward the end of digestion it becomes less active, and ceases when the Stomach is emptied.

The length of time for Stomach digestion varies according to the kind of food taken.

The quantity of Gastric juice is regulated by the wants of the system, and not by the amount of food taken; all taken over

these meals acts as a source of irritation. It has been estimated that the quantity of Gastric juice secreted in twenty four hours is about twenty pints, it does not however accumulate in the stomach in any considerable quantity, but is gradually poured out while the food is undissolved, and absorbed together with the nutritious substances which it holds in solution. The action of Gastric juice is greatly influenced by the condition of the nervous system; mental

consequence often attends it for a considerable time.

From the stomach the portion of food which have not been digested, pass into the small intestine, which is a convoluted tube, about twenty five feet in length, gradually diminishing in size from its commencement to its termination. It has been divided into three portions; the Duodenum, Jejunum, and Ileum. It is contained in the central and lower part of the Abdominal and Pelvic cavities. &c.

Duodenum is the most deeply
seated, the largest and short-
est portion of the small intest-
ine, being but eight or ten
inches in length. The jeju-
num forms about two fifths
of the upper portion, and the
ileum the remaining three
fifths; the ileum is the small-
est portion of the small intestine.

After the undigested portions
of food pass the cardiac orifice
of the stomach into the Duod-
enum, they meet with the in-
testinal juices, which are a
mixture of three different

fluids: the Bile, the Pancreatic fluid, and the secretions of the intestine.

The only substances digested in the Stomach are the albuminous; the Starchy and Oily, or as they are sometimes called "Non-nitrogenous" substances remaining to undergo that process in the Small Intestine.

The Intestional juice proper is the chief agent in the digestion of Starch; it is the product of two sets of glands situated in, and beneath the mucous membrane, viz; the

follicles of Lieberkühn, and the glands of Brunner. The follicles of Lieberkühn occupy the whole thickness of the mucous membrane, and are in great numbers throughout it. Small and large intestine. The glands of Brunner are confined to the Duodenum. The intestinal juice, which is secreted by these glands, is cloudy; it is colorless, viscid, and coats in consistency, and alkaline in reaction. It possesses the power of rapidly converting starch into Sugar.

follicles of Lieberkühn, and the glands of Brunner. The follicles of Lieberkühn occupy the whole thickness of the mucous membrane, and are in great numbers throughout both small and large intestine. The glands of Brunner are confined to the Duodenum. The intestinal juice, which is secreted by these glands, is scanty; it is colorless, viscid, mucous in consistency, and alkaline in reaction. It possesses the power of rapidly converting starch into sugar.

The only necessary articles of food to be digested are the oily. This operation takes place in the small intestine, but not immediately after they enter the Duodenum, not until they pass the orifice of the pancreatic and Biliary ducts. It is not the Bile, but the pancreatic fluid which possesses the power of digesting these substances. It is secreted by the Pancreas, a gland about ten inches in length, weighing three or four ounces. It is situated transversely across the

posterior wall of the Abdomen behind the Stomach. Its duct is called the duct of Wirsung, it extends from left to right through the substance of the Pancreas, terminating in the papela of mucous membrane common to it, and the Ductus communicans choledocus on the inner side of the Duodenum. The Pancreatic juice is a colorless, and somewhat viscid fluid, with a distinctly alkaline reaction: its flow is at all times scanty. It contains about 900 parts of water,

Secretion about 2 parts Chloride of Sodium, 1 part other substances existing in very small proportions. When the oily portions of food come in contact with this juice, they lose their characteristic appearance, and are converted into a white, opaque emulsion, which is gradually absorbed; this emulsion is termed chyle; it is always to be found in the Intestine during the digestion of Fat.

The digestion of food is made up of several different processes. In the Mouth it un-

digests the process of mastication and insalivation; next it passes into the Stomach when it meets with the "Pepsine which is the essential organic substance of the Gastric juice in the process of digestion. Here the Nitrogenous substances are converted into Albuminoze, but this digestion is not confined to the Stomach, but continues after it has passed into the small Intestine. The substances which passes the Pylorus are termed Chyme; after entering the Intestine the Pancreatic

and Intestinal juices convert the Starch into sugar, and break up the fatty matters into a fine emulsion and convert it into chyle: These secretions commence in different parts of the alimentary canal, but their action goes on simultaneously in the small Intestine. In this way digestion continues from the Stomach throughout the small Intestine, while the digested substances, with the digestive fluids, are gradually absorbed and carried off by the circulation, the re

mass of the undigested mat-
ters are carried down the
small, by its peristaltic motion
through the Ileo caecal valve
into the Large Intestine.

The Large Intestine extends
from the termination of the
Ileum to the anus. Its length
is about five feet. It differs
from the small Intestine in
its greater size, and sacculated
form. Its office also differs,
being chiefly confined to the
separation and discharge of
excrementitious substances.
It is divided into Caecum

Colon and Rectum. The Caecum is a blind pouch about two inches in length, situated in the right Iliac fossa, behind the abdominal wall.

The Colon next to the Caecum in size, joins it, and passes upwards through the right Lumbar region to the under surface of the Liver, under the name of ascending Colon; it then bends inwards and crosses the upper part of the Umbilical region under the name of Transverse Colon; the next is called the

Descending portion. where it descends through the left Lumbar region to the left Iliac fossa. making a curve upon itself- called the Sigmoid flexure where it joins the Rectum. The Rectum is six or eight inches in length, passing from the left Sacro Iliac symphasis to the anus, where it terminates; it first curves to the right, descends in front of the lower part of the Sacrum and Coccyx, then inclines backward before terminating.

Below the Ileocecal valve is formed by two folds of mucous membrane, at the junction of the Caecum with the Colon, and at the termination of the Small Intestine, the contents of the alimentary Canal exhibit a different appearance in color, odor and consistency.- The contents of the Large Intestine is composed for the most part of animal substances discharged by excretion, together with the undigested remains of articles taken as food.

There being but little absorption from the large intestine its contents accumulates under the form of Feces. where it remains until defecation takes place; it would escape involuntarily, were it not prevented by the Sphincter Ani muscle which is partially under the reflex system of nerves. The act is accomplished, principally by contraction of the Diaphragm and abdominal Muscles.—

Sept 1. 27th 1868.—

AN

Inaugural Dissertation

ON

Scarlet Fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Luke Mercer Shipley

Of

Howard County, Maryland.

Session of Autumn & Winter of 1868 & 1869.

THESIS

ON DEATH.

INTRODUCTION.

"In the day that thou eatest thereof thou shalt surely die." Genesis, 2d, & 17th.

Here is the first recorded allusion to death in the history of the human race: and in the 3d & 19th of Genesis can be found the following quotation: "In the sweat of thy face shalt thou eat bread; till thou return unto the ground; for out of it wast thou taken: for dust thou art, and unto dust shalt thou return." This language clearly

indicates the constituents of the human edifice as it existed in the beauty and perfection of so infinitely well poised elements as to elicit the approval of the Architect Divine; and just as plainly is the physician, in the same language directed to resort to the three great kingdoms of nature, the natural Materia Medica, for the remedial agents necessary to restore equilibrium in the disordered elements composing the sin-cursed body.

That transgression has brought down its full measure of punishment need not be doubted when we know "All that tread the earth are but a

hands of the tribes that
slumber on its bosom; and millions
in those solitudes since first the flight
of years began, have laid them down
in their last sleep. The golden sun,
the planets, all the infinite host of
heaven, are shining on the sad abodes
of death through the still lapse
of ages."

It is interesting to follow the medical historian as he traces the slow progress of medical science down through the dismal records of time, ancient, mediaeval, and modern; yet little surprise is elicited at the slow progress of medical, as well as other science, when we remember

the superstitious popular opposition and anti-progressive laws that clogged the wheel of scientific investigation, and threatened its advocates with dungeon, stake, and scaffold.

A sounder philosophy has, in modern times, achieved at least a partial victory over the deep rooted errors of false empiricism, both in ethics and physics.

Some fear is doubtless properly entertained of becoming too enthusiastic, and consequently incautious in the reception and promulgation of medical theories, which might lead to dangerous practice being unsubstantiated by the corroborative testimony of clinical experience, which is the only true mea-

sure of therapeutic propriety and remedial efficacy: Hence arises the continual necessity in medical practice, of thorough investigation, proper appreciation, accurate interpretation, and prudent application of all the resources of the Materia Medica.

These desultory remarks are sufficient to introduce me to the performance of a requirement made general by the distinguished Faculty of this University.

As a theme I have selected one from a branch of medical science so ably and earnestly taught by Prof. W. T. Howard. May he still more enlighten by teaching - this neglected branch of medicine!

Scarlatina.

To favor perspicuity and facilitate description, I shall divide the consideration of this affection into the following sections, and notice each in succession: Clinical History, Morbid Anatomy, Causation, Diagnosis, Prognosis, and Treatment: leaving sequels to the last, as also their therapeutic management.

Clinical History. – Observers differ as to the varieties of this malady claiming special description – some making two, mild & severe; others three, Scarlatina Simplex, Scarlatina anginosa, & Scarlatina maligna; some again a fourth, Scarlatina sine exanthemate, and several sub-varieties. Such minute classification offers no advantages, but rather

tends to produce confusion and obscurity in the description and clinical practice.

I shall therefore follow Prof. Howard, and divide the disease into Mild & moderately severe, and Severe or malignant cases.

The progress of the disorder is commonly separated into three stages; viz., Invasion, Eruption, and Desquamation or decline.

Invasion — Commences with a feeling of general malaise or indefinite uneasiness, progressing debility, and increasing heat of system — all of which I recollect vividly myself, having experienced the disease when a child. Vomiting is a frequent symptom, especially in children.

A chill may or may not precede the on-

set of fever, which last symptom is one of intense severety in this malady, the temperature of the body being 105° Fah., or more. Pulse much accelerated, reaching 140 or over that number of strokes per minute. In some cases epistaxis occurs, and so common is sore throat, that Prof. Howard ignores the disease as spurious unless this symptom is manifested. After an average duration of twenty-four hours, which may be much less or perhaps more, the stage of invasion is succeeded by that of

Eruption: This usually appears on the neck, chest, and face, but cases differ much in this respect; the rash sometimes being primary on the extremities.

The early eruption presents the appearance of innumerable red points, which soon coallesce and thus melt into a general flush of considerable size and irregular contour, though the redness may cover the whole surface in some instances, and assume an appearance pertinently compared to the color of a boiled lobster. The rash passes over the entire surface in about twenty-four hours from its inception. The eruption is best developed at the flexures of joints, and other delicate parts of the skin; and it will present a momentary white line if a hard substance be drawn across the surface. More or less soreness and

swelling are now observed or felt in the throat with a deposit of light or ash-colored substance, which might lead the careless physician to suspect diphtheritic exudation; but which on proper examination is found to be pultaceous matter not removable in strips, nor leaving ulcerated surfaces beneath. The submaxillary and lymphatic glands and areolar tissue about the neck are found swollen, producing notable difficulty in deglutition and pain in opening the mouth widely. Another interesting and almost pathognomonic symptom of this disease is the peculiar appearance of the tongue, which early in the clinical history is coated light

or yellowish, the reddened papillae pro
jecting through it; but as the coating
exfoliates during the progress of the fever,
the inlaved papillae present the charac
teristic strawberry tongue. In some in-
stances an adhesive mucus collects in the
back part of fauces, or a severe catarrh
of the nasal mucous membrane comes on,
discharges running down and, by excoria
ting the lips, augment the suffering of
infant helplessness. The febrile excitement
does not abate as eruption progresses; but
rather increases in intensity, pulse grow-
ing quicker and vibratory, yet always
compressible, arguing excited action, but
diminished power of the heart's systole.

During presence of eruption, thirst is urgent, anorexia continues, and diarrhoea or constipation may be superadded. As a general rule the dispnoea is great in severe forms of the throat symptoms, and seems to be the chief cause of death. Delirium may be more or less pronounced. Albumen appears in urine in a certain number of cases during this stage.

The duration of the eruptive stage is five or six days, may be less and is frequently more, and about its cessation begins

Stage of Desquamation or decline, which may be completed in five or six days more, or prolonged indefinitely, the cuticle being reproduced and exfoli-

ated several times in succession in some instances. The desquamation from the face and trunk is mostly of the furfuraceous kind, but may be sloughed in large flakes, resembling gloves, from the feet and hands. Some epidemics of this fever show a greater tendency to exfoliation of cuticle than others; and in isolated cases no desquamation occurs. Where the attack progresses favorably the fever subsides during this stage, and convalescence is gradually declared, as usual; but defervescence may be rapid. Albuminuria occurs more frequently in this than in the eruptive stage, and may indicate slight or grave renal complication in the various cases.

Severe, or Malignant scarlatina.-
In such cases all the symptoms
that have sufficient time to be devel-
oped, are aggravated in type, and have
superadded certain nervous symptoms,
which Prof. Howard has endeavored to
impress upon the minds of his pupils
as being the characteristic difference be-
tween the milder forms of this malady, and
the, so called, malignant cases. The most
prominent of these extra symptoms are
extreme rapidity of pulse, reaching, accord-
ing to Prof. H. 180 shocks per min., and
the temperature of body as high as 110° Fah.
With these symptoms we have delirii-
um, coma, and convulsions, especially

in young children. In some instances, such is the violence of the onset, that the eruption and sore throat are not developed, the scarlatinal poison, so denominated, destroying the vital energies with surprising rapidity, producing fatal collapse somewhat resembling the same condition in connection with Asiatic cholera.

A remarkable case of this hasty termination has come under my notice during the progress of these lectures. A little boy about six years old, good former health, and robust appearance complained a little in the forenoon, and was induced by his parents to lie down at 1 o'clock P. M. Soon growing worse, medical assistance of the highest class was

very hastily summoned; but in about twelve hours from the time he lay down, as before stated, the toxaemic scarlatinal poison rendered the perpetuity of life impossible. Nevertheless, most of these severe cases do not terminate with such exceeding rapidity; but the patient survives five or six days, petechiae or rubrices appear on the skin, hemorrhage from the bowels followed by unyielding diarrhoea, or typhoid symptoms come on, and the child yields more gradually to the combined disorders.

Again the soreness of throat may increase in degree, going on to irregular ulceration partially destroying the tonsils. The inflamation may invade the larynx

and nasal passages, having, in the latter, the form of a fetid coryza, occasionally involving the Eustachian tubes, and internal ear, occasioning transient or permanent deafness. The parotid glands may become swollen and indurated, and though having little tendency to suppurate, may greatly embarrass mastication, deglutition and respiration. Complications in this disease are so numerous, that it is difficult to say how much is due to them, and how much constitutes the natural history of the affection. Among them may be enumerated, albuminuria of greater or less gravity as to organic disease of kidneys, which would

be determined by the presence or absence of granular or waxy casts in the urine, and by the symptoms of uraemic poisoning. General dropsy may appear as a complication or sequel. The urine should be examined for urea frequently, as uraemic poisoning may supervene without either albuminuria or anasarca.

Morbid Anatomy. – The changes found post mortem in this disease are said to be due, in great measure, to the complicating affections. A certain amount of semi-coagulated blood is found in the heart and large vessels. In conjunction with congestion in mucous membrane of oesophagus, stomach, and bowels,

some observers allege that infiltration and partial disorganization has taken place in stomach tubes and some of the intestinal glandular structures. The texture of heart and kidneys has been found softened, breaking down under very trivial pressure with the fingers.

Causation. – It seems to be beyond contradiction that this disease can be communicated by direct contagion, and conveyed by fomites; yet, some able writers assert, and adduce weighty testimony in support of a directly contrary opinion. In-oculation is said to have produced the disease. The period of incubation after exposure is very variable, but

shorter than in other eruptive fevers; being placed at from four to six days by Dr. Tanner and others. It seems to be a disease of children mainly, the ages of three and four years affording the majority of cases; being much less frequent in young children, and comparatively rare in advanced life. Two attacks may be experienced by the same individual, repetitions said never to be fatal. Some have a peculiar idiosyncrasy to the disease, Dr. West observes; and I believe some families are predisposed to a severe form of the fever. The primary cause of this grave type of essential fever is like other first causes, hidden in profound obscurity,

such as, in all probability, will never be unravelled, even by the researches of the most gigantic intellects, remaining unknown, undiscovered, undiscoverable.

Diagnosis. — The recognition of this disease cannot be attended with any considerable degree of difficulty when the symptoms are manifested in the usual manner. From variola it may be known by its shorter period of incubation, early appearance of eruption, absence of peculiar character of latter, shorter prodromic stage in scarlet fever, the great rapidity of pulse and exalted temperature, absence of similar pain in limbs and back, peculiar appearance of tongue and scarlet tint of e-

ruption, persistence of fever after the erup
tion is out, &c. From rubeola by absence of
premonitory coryza and bronchitis, of wa-
tery and inflamed condition of eyes, the
incubation period of measles being much
longer, eruption delayed, different char-
acter of this, and dissimilar order of
appearance. Higher fever in scarlatina.
The appearance of tongue and throat
are distinctive of scarlet fever and con-
sequently absent in rubeola. Mistaking
roseola for scarlatina is improbable, when
we consider the absence or mildness of con-
stitutional disturbance in former, the
circumscribed patches of eruption, and
irregular location of rash as compared

with analagous symptoms of the graver malady. From erythema by want of considerable febrile disturbance, and by irregular development and local character of latter disease.

Prognosis. — Dr. Howard in his lectures well says, "No other disease is so capricious in its rate of mortality," and adds, "The prognosis depends in some degree on the prevailing type of the epidemic; but more on the individual character of each case." In the milder cases the death rate is comparatively small, while in those where the throat seems to receive the concentration of poison, prognosis is more unfavorable; but if

the nervous symptoms are conspicuous, as in the, so called, malignant type of the disease, a fatal termination can be almost certainly predicted. Prof. Howard cautions his pupils to be guarded in pronouncing a favorable prognosis in apparently mild cases, as the seeming benignity is no security against complications of the most dangerous significance. A dark hue of eruption and tendency to hemorrhage from mucous surfaces are ominous of fatal termination. Uraemic convulsions are exceedingly dangerous, and if prompt and efficient relief be not afforded, death ensues in a very short time." The patient is by no means

safe after albumen has disappeared from urine, if casts continue to be found in the sediment, more especially if the quantity of urine be small and s.g. low."

Treatment. – Scarlatina, like other essential fevers is said to have a certain definite course to run, which cannot be suddenly abridged and controlled; hence arises the importance of economizing the powers of life, of abstaining from the employment of depletory measures, that the systemic vigor may be sufficient to resist successfully the toxaemic virulence and to eliminate the materies morbi, if such exist, or to rally its vital energy after the disease has expended its force

by the law of self limitation. Such is the variableness of its gravity and complications as to contraindicate any routine plan of treatment, making almost every case a law in itself for treatment.

Mild cases scarcely require more than hygienic management, or only such little attentions to the several important functions of the system, as are necessary in any trivial disorder. If the fever be considerable at first, most authorities advise the occasional use of the tepid bath, or it is better, perhaps, to use the sponge to apply moisture to the hot surface. A bolder plan of procedure is to use cold affusion; but this seems to be

rather heroic and formidable for application to the whole surface; though, doubtless, it is an admirable practice where exhibited to the head alone for the control of high fever and delirium. The same end is secured in either case, that is, heat is abstracted from the burning skin; and the action of surface and comfort of patient greatly promoted. The advantages of this treatment are said to be marked reduction in frequency of heart's action, cooling of surface, and general tranquility of the patient, which often leads to refreshing sleep and consequent recuperation of nervous tone. Prof. Howard advises the use of vinegar and water for surface sponging, slightly astringent.

Dr. Wist, following the practice of certain German physicians, uses injections of laid instead of water sponging, and says it controls the burning heat of skin more effectually than the latter. Dr. J. F. Meigs recommends, as more agreeable to patient, and equally efficacious, glycerine and rose-water ointment. Dr. Hastings of Hartford Conn., uses four or five parts of glycerine to one of cologne water.

An emetic of ipecac and sulphate of zinc is advised by Prof. Howard, in the first stage of the disease, if the stomach be overloaded; and a laxative of magnesia; but he cautions against the production of catharsis in all such cases.

A gargle of lemon juice and honey may be employed with benefit, or exhibited with a sponge probang if child be too young to gargle. Some practitioners use chlorate of potash, or the permanganate for the throat affection. Prof. H. uses soap liniment ʒj, camphor liniment and tincture of opium, of each ʒiv, as an anodyne liniment to neck. He also mentions a valuable measure, which should not be neglected; that of employing a sponge probang or something equivalent to remove accumulations of mucous from the throat and posterior naves. Such collections might seriously embarrass respiration in small children;

or even suffocate the helpless infant. After thus removing these secretions, wash out the nasal passages with soap and water, or a weak solution of sulphate of copper, chlorinated soda or nitrate of silver. May use inhalations of carbolic acid or permanganate of potash. In severe or malignant cases, apply mustard to the feet, employ sponge bath and general warm bath frequently repeated. A stronger solution of nitrate of silver (10 or 20 grs. to the ℥ of distilled water), or hydrochloric acid and honey, according to Dr. West, may be used for the throat. When a light ash colored deposit is seen in the throat, Prof. H. considers the employment of infusion of

cayenne pepper (one good pod to one half pint boiling water) as a measure of considerable value under such conditions.
Tincture of iodine may be advantageously used as a liniment to neck if glandular enlargements demand attention.
Other plans of treatment, to meet or fulfil certain general or special conditions, are followed by different practitioners; and many minor attentions required in individual cases, but not necessary or applicable in all, are in the aggregate of very great importance.
Where the powers of life are flagging, or seem to be overwhelmed by the scarlatinal poison, the use of stimulants and

tonics, conjoined with suitable nourishment, are demanded, as in other forms of fever where the tendency is to death by asthenia. Wine whey, milk punch, egg nog, &c., are eligible forms of combining stimulation and nutritious diet.

Prophylaxis. – Belladonna is said to possess such power, but many high authorities consider it to be entirely inert in this respect. Since it is innocuous, if no immunity be secured by its employment, it may be prudent to use it; particularly if requested, as Prof. Howard observes, after Dr. Stille's plan; viz., "Dissolve from one to three grains of fresh and well prepared ext. of belladonna, in one ounce of cinnamon

water, adding a few drops of alcohol to prevent fermentation. Of this solution may be given, two or three times a day, one drop for each year of the child's age, to be so administered for two or three weeks, or longer if the danger should continue".

Sequelae.- Swelling and suppuration of glands about the neck may occur after convalescence from scarlatina, the suppuration sometimes burrowing deep and producing retro-pharyngeal abscess. Boils may succeed in some instances. Pleurisy, pericarditis, and articular rheumatism are seen in rare cases; the last leading, perhaps, to anchylosis of the affected joint. The most common

sequel of scarlet fever is albuminuria and general dropsy, coming on in two or three weeks after desquamation.

Dr. Flint says, "Acute albuminuria after scarlet fever rarely ends in chronic renal disease;" i. e., incurable Bright's disease.

The sequels of this affection require the same general treatment as would be rationally indicated if not occurring after scarlatina; but depletory measures are rarely admissible here.

Prof. Howard recommends the "corn sweat" of N. C., in the dropsy succeeding scarlatina, i. e. boil green corn and put the hot ears around the patient's body and then cover him well with blankets.

An

Inaugural Dissertation

on

The Heart

Submitted to the Examination

of the

Provost, Regents and Faculty

of

Physic,

of the

University of Maryland,

for the Degree of

Doctor of Medicine,

By

P. H. Reiche

Of Queen Ann's County, Md.

Session of 1868-69.

The Heart
its
Anatomy & Physiology

By
P. H. Reiche
of
Queen Anne's County
Maryland
Session of 1868–69.

The Heart is the centre of the circulatory system, being the source of the arteries and the termination of the veins. It is situated in the thoracic cavity, behind the Sternum, and is connected at its superior and posterior part to the great Blood vessels, and through them loosely fixed to the Spinal column; but it is free and moveable in the rest of its extent, being merely confined in its situation by the pericardium.

The Pericardium is placed behind the Sternum and the cartilages of the fourth, fifth, sixth, and seventh ribs of the left side, in the interval between the Pleurae, and is mostly

covered by, and adheres to, the latter, by a loose cellular membrane. Its shape resembles the figure of the heart itself, being a conical membranous sac, but its position in the thoracic cavity differs materially from that of the heart, for its base envelopes the apex of this organ, and rests upon, and strongly adheres to the central tendon of the Diaphragm; and its apex is directed upwards and surrounds the great vessels for about two inches above their origin from the base of the heart. It is a fibro-serous membrane, consisting of an external fibrous and an internal serous layer. Its substance is thick and compact, and much more dense and strong than either the Peritoneum, or Pleurae. The external or fibrous layer is attached below to the central tendon of the diaphragm, and above, surrounds for a short distance, the great vessels, which

have their origin at the base of the heart, and is continued upon them until gradually lost upon their external coats. The internal or visceral layer consists of a visceral and a parietal portion. The latter adheres closely to the fibrous layer of the pericardium, and where the great vessels are connected to the heart, the visceral portion of this serous membrane becomes reflected upon its entire surface, and hence the substance of the heart has a close investment from this membrane. A small portion of the large blood-vessels is also included within the cavity of the pericardium, particularly the Aorta and Pulmonary artery which are consequently also covered by the reflected portion. The cavity of the pericardium is larger than the heart, so that this viscus can move freely in it. Its inner surface is smooth and glistening, and secretes a thin serous fluid, which lubricates

the opposed surfaces of the heart and pericardium, and thereby facilitates their motion on each other, and prevents their accretion.

The Heart, which is placed beneath the lower two thirds of the Sternum, and projecting more into the left than into the right cavity of the chest, resembles a half cone, hence we distinguish in it, a basis or, broad part, and an apex or narrow portion, also a convex, and a flat surface. The basis is placed towards the right, and is directed upwards and backwards, the apex points obliquely to the left side, forwards and downwards. The basis is opposite to, and corresponds to the interval between the fifth and eighth dorsal vertebrae; and the apex points to the intervspace between the cartilages of the fifth and sixth ribs, about an inch to the

inner side of, and two inches below the left nipple.

The convex surface is its anterior surface, and formed chiefly by the right ventricle, and only a small portion of the left, and it is directed upwards and forwards. The flattened surface is that which rests upon the diaphragm, and is also called its posterior surface. A small portion of the left lung seems, as it were, removed just at the apex of the heart, so that that part of this viscus is not covered by the lung like the rest, but touches the front of the chest.

The weight of the adult human heart varies from eight to twelve ounces, being somewhat lighter in the female, than in the male. It measures about five inches in length, three and a half in breadth at its broadest part, and two and a half inches in thickness.

The heart is hollow within, and is subdivided into two lateral halves, by a longitudinal septum, which receives the name of Septum Auriculorum at its superior part, and Septum Ventriculorum at its inferior portion.

Like the heart of the Mammalia, this organ in the human being, might properly be considered as a double heart, or even as two hearts, closely and intimately connected. One of these, the left, is concerned with the circulation throughout the body, and consequently might correctly be styled the "Systemic heart", whereas the other, or right, is concerned with the circulation through the lungs, and can therefore be termed the venous or "Pulmonic heart". These might perform their offices in the adult, if separate or even distant from each other. Each of these hearts consists of two cavities, an

Auricle or membranous bag, into which open the great veins; and a Ventricle or strong muscular organ, placed at the orifice of the artery, and constructed for the purpose of driving the blood into that vessel and its branches.

The two Auricles are situated at the base, or at the superior and posterior portion of the heart, and the two Ventricles forming the chief bulk of this organ, occupy the front and lower portion. The right ventricle, in an anterior view of the heart, almost conceals the left, and consequently forms the greater portion of its anterior surface, but in a posterior aspect, the right ventricle is almost concealed by the left, and therefore the latter forms more of its posterior surface; but in either position, the apex of the heart is formed altogether by the point of the left Ventricle.

The surface of the heart is traversed by furrows or grooves, which serve to indicate the internal subdivision of this organ into the four cavities of which I have been speaking, constituting: the Auriculo-ventricular groove, which has a transverse direction, and separates both auricles from both ventricles, and the longitudinal groove, extending from the base to the apex of the heart, and separating at its superior portion, the two auricles into right and left, and is accordingly called for this extent, the Inter-auricular groove, but its inferior portion, where it separates the right ventricle from the left, is styled the Inter-ventricular groove.

In order to elucidate the anatomical structure of the interior of the heart, I find it necessary to give at the same time its physiological functions.

The blood after circulating through the blood vessels

of the body and after serving the various purposes of nutrition, secretion &c., is returned into the right auricle of the heart by three large veins, viz: 1st. the Superior Vena Cava, which returnes the blood from the upper half of the body, and opens into the upper and front part of the right auricle; 2nd. the Inferior Vena Cava which returnes the blood from the lower half of the body, and opens into the lowest part of the right auricle, and is provided just at its entrance, with the remains of a valve, the "Eustachian" which is of large size during foetal life, but is very small and occasionally entirely wanting in the adult; and 3rd. the Coronary Sinus which returns the blood from the substance of the heart and opens into this auricle, between the vena cava and the auriculer-ventricular opening, and its aperture being guarded by a duplicature of the lining membrane of the heart, the Coronary Valve.

There are also the "Venae Thebesii," numerous minute veins which return the blood from the muscular substance of the heart, without entering into the venous current, and open by minute orifices on the inner surface of the right auricle.

The properties of this blood have been so much altered and impaired in its passage throughout the system, that before it can again subserve its function of nutrition, it is necessary that it should be subjected to the influence of the atmosphere, and is therefore directed to pass through the lungs.

The right auricle, as well as the left, derives its name auricle, from a small fringed process, the Appendix Auricula, so named from a fancied resemblance to a dog's ear, and which is found on its anterior part. The rest of the cavity receives the name of the Sinus of the Venae Cavae. The muscular fibres

of this auricle are not numerous nor large; they are arranged in parallel fasciculi, which have been compared to the teeth of a comb, and hence the epithet of Musculi Pectinati has been given to them. There is also to be seen on the lower part of the Septum Auricularum, the Fossa Ovalis and the Annulus Ovalis which however are of no other interest, than that they are the relics of fœtal structure.

From the Right Auricle, the blood is transmitted in a continuous stream into the Right or Pulmonic ventricle, through a large oval aperture, called the Auriculo-ventricular orifice. When this latter cavity contracts, the blood would be driven towards and into the auricle, were not the above orifice guarded and protected by a valve, called the Tricuspid-Valve. This valve is formed by a duplicature of the lining membrane of the heart and strengthened by a layer

of fibrous tissue, and is divided into three pointed portions or segments, the free margins of which, as also on their ventricular surface, afford attachment to some delicate tendinous cords, the Chordae tendinae, through which the above segments are tied to certain projecting packets of muscular fibres, the fleshy columns, or Columnae Carneae, and these are attached to the whole inner surface of the ventricle, excepting near the opening of the Pulmonary artery.

The structure of the ventricle is very different from that of the auricle. It is a strong muscular cavity, adapted to the office of forcibly projecting the blood through the arterial ramifications, whereas the auricle serves as a mere reservoir, holding the blood until the ventricle has emptied itself by its contraction. This ventricle is of a triangular form, and its anterior surface, which forms the greater part of the front of the

heart, is round and convex; its posterior surface is flat and forms but a small portion of that part of the heart, which rests upon the diaphragm. Its inner wall is the septum ventriculorum, and bulges into the cavity of this ventricle. At its superior and anterior aspect, this ventricle forms a tubular prolongation, and is styled the Conus Arteriosus, and it is from this portion that the pulmonary artery arises, and which conveys the blood into the lungs.

The opening of this artery, which is called the arterial orifice of the ventricle is furnished with three valves, named from their appearance the Semilunar, which prevent any retrograde movement of the blood from the artery towards the heart. These valves consist of three semicircular fibrous sheets, covered by a layer of Endocardial epithelium. By their convex margins they are fastened to the inner surface of the base of

the artery, while their free edges are directed away from the cavity of the ventricle. At the middle of each free border is situated a small, rounded, fibro-cartilaginous nodule, called Corpus Arantii. During the systole of the heart, and while the blood is passing from the ventricle to the artery, these valves become relaxed, and are thrown forwards and pressed close to the sides of this canal, and then the course of the blood is uninterrupted, but during the ventricular Diastole, and when the artery by the elasticity of its walls, reacts upon its contents, these valves become immediately depressed, and shut back against the orifice, but these three semicircular folds coming in contact with one another, would leave a small triangular space in its centre, which however is filled up by the three Corpora Arantii, before spoken of, so that the entrance of this orifice is effectually closed.

The venous blood, on being exposed to the atmospheric air in the lungs, is now altered in its properties and becomes arterial blood, in which state it is returned to the left auricle of the heart by the four Pulmonary veins, two of which belong to each lung, and open accordingly two into the right, and two into the left side of this auricle; these are not guarded by valves. This left or arterial auricle is rather smaller than the right, but its walls are somewhat thicker. Its large cavity receives the name of the Sinus of the Pulmonary veins. Its appendix auricula is longer and narrower, than that of the right side, and overlaps the Conus Arteriosus at the root of the Pulmonary artery. The Musculi Pectinati are fewer in number and smaller than those of the right side, and are only to be found on the inner surface of the appendix. This auricle is situated quite at the superior and posterior part of the heart, and trans-

mits the blood through the auriculo-ventricular orifice into the left ventricle. This aperture is precisely similar in all essential points to the corresponding one on the right side of the heart. But it is guarded by a valve which is divided into two portions, and from its resemblance to a bishop's mitre, has been styled the Mitral valve. It adheres by its base to the circumference of the auriculo-ventricular orifice, and is formed like the Tricuspid valve on the opposite side, by a duplicature of the lining membrane and contains also some muscular fibres, but is much larger and stronger than the Tricuspid. The free margins of this valve afford attachment to the Chordae tendinae, which though less numerous, are much stronger, than those on the right side. The Columnae Carneae though smaller, are yet more numerous than those on the right side of the heart.

The left ventricle forms only a small portion of the anterior surface of the heart, but it projects beyond the right and consequently forms alone the apex of the heart. It is also much thicker and stronger than the right. The reason of this difference is obvious; being the great motive power which impels the blood throughout the body, whereas the right has only to force it through the lungs.

The Aortic opening is at the superior part of this ventricle, just in front of the left auriculo-ventricular orifice. This opening, like that of the Pulmonary artery on the right side, is surrounded and guarded by three semilunar valves, which are also similarly attached, but are much larger and stronger, and the Corpora Arantii are much more protuberant.

The membrane which has been several times referred to, and which lines the surface of the four cavities of the

heart is called the Endocardium. It greatly assists in forming by its reduplications the valves of this organ. It is a serous membrane, delicate, smooth and transparent, and gives to these cavities their glistening appearance. It is continuous with the internal homogeneous coats of the great bloodvessels, the arteries, as well as the veins.

The Structure of the heart is composed of muscular fibres and of fibrous rings which serve for their attachment. The fibrous rings surround the auriculo ventricular and the arterial orifices, being covered by the lining membrane of the heart, and are thicker and stronger on the left, than on the right side. The rings forming the constrictions of the auriculo ventricular orifices give attachment to the muscular fibres of the auricles and ventricles, and also

to the mitral and tricuspid valves. The fibrous rings, surrounding the arterial orifices, give attachment to the muscular fibres of the ventricles on the one hand, and on the other, serve for the attachment of the great vessels and semilunar valves.

The Muscular structure of the heart presents a most peculiar arrangement of its fibres, which however has an important relation to its contractions and dilatations.

The fibres of the auricles, being independent of those of the ventricles consists of two layers, a superficial and deep. The superficial fibres are common to both auricles, forming only a thin layer, and have a transverse direction, entirely around the base of the same. The internal or deep fibres are proper to each auricle, and consist of two sets, the looped and annular. The looped fibres are disposed in a direction, partly

spiral, and loop upwards over each auricle and become attached by both extremities to the corresponding auriculo-ventricular ring in front and behind. The annular fibres on the contrary, are disposed in a circular direction, extending over the appendices auriculae and are even continued for a short distance on the walls of the venae Cavae and Coronary veins on the right side, and upon the Pulmonary veins on the left side.

The fibres of the ventricles, like those of the auricles, are arranged in bundles or layers, some of which are common to both ventricles, while others belong exclusively to one. The most superficial fibres start from the base of the ventricles, and loop towards the apex, and run obliquely or spirally over its anterior surface from right to left, and from above downwards. These fibres converge towards the apex of the

head, curling round it in a whirl-like manner, then becoming depressed, ascend, and spread out upon the septum and inner surface of the ventricles, and have their termination in the auriculo ventricular rings, or indirectly through the Chordae tendinae in the Columnae Carneae. Some of these spiral fibres embrace the ventricles, while others enter at the interventricular groove and surround either ventricle singly.

The deepest layers of fibres include each ventricular cavity singly, or may pass across the longitudinal furrows and embrace both ventricles. They have a circular direction, and are attached to the auriculo-ventricular rings and the Columnae Carneae.

Having gone over the intricate interlacement of the fibres of the heart, I will now show their important bearing to the different motions of the same.

The motion of any part of the heart considered singly and individually, consists in a constant series of alternate contractions and dilatations, or as they are technically termed, alternate states of Systole and Diastole. The contraction or Systole takes place in the heart as in other muscles. At each contraction the walls of the ventricles approximate toward their middle partition or septum; its muscular fibres become swollen and indurated, and their combined lateral swelling causes a protrusion of the apex of the ventricle, and the heart necessarily elongates simultaneously with the approximation of its walls. This elongation or protrusion of the hearts apex during the time of its contraction, is however, denied to take place by many physiologists, and accordingly, may be considered at the prevent time, a question not yet settled, nevertheless, I am

fully convinced, from the observation of many experimental physiologists, and from this explanation of this phenomenon according to the anatomical structure of the organ, and also from the teachings and arguments elicited in its favor by our distinguished and esteemed "Prof. of Physiology" &c., that this elongation of the heart at the time of its contraction, is an established fact. This change in position and form is due principally to the preponderance of circular fibres which enter into the structure of each ventricle, and these during their contraction must necessarily become swollen, and consequently, their combined lateral swelling protrudes the apex of the heart.

At the same time that the heart becomes elongated and indurated, it rotates upon its axis and its apex is moved from right to left. This movement

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At the same time that the heart becomes elongated and indurated, it rotates upon its axis and its apex is moved from right to left. This movement

is due to the arrangement of the spiral fibres, which we have been studying, from the base to the apex, curling around the latter, and converge towards its central point. For, "it is well known, that every caused muscular fibre at the time of its contraction, necessarily approximates more or less to a straight line. Its curvature is diminished in exact proportion to the extent of its contraction, and if arranged in a spiral form its contraction tends in the same degree to untwist the spiral. During the contraction of the heart, therefore, its apex rotates on its own axis in the same direction as the combined contraction of its circular and spiral fibres indicate, which is from left to right anteriorly and from right to left posteriorly. This therefore produces the twisting movement of the apex, which protrudes the point of the heart at the time of its

contraction and brings the apex of the organ in contact with the parietes of the chest. This latter constitutes the shock or impulse of the heart, which is readily perceptible externally both to the eye and to the touch."

"With each impulse or systole, portions of blood are received by the auricles, driven into the ventricles, and by them expelled into the arteries. Each one of these actions separately and distinctly constitutes a beat or pulsation of the heart.

"The rhythm of the heart's pulsation is peculiar and somewhat complicated." The auricles and ventricles when viewed in relation to each other, are successively contracted and dilated, the corresponding parts acting in concert on both sides of the heart. Thus when the auricles contract, in order to expel the blood which they have received from the system at large and from the lungs, the ventricles are relaxed, and therefore in

a state fit for receiving the blood. When in the following moment the recently filled ventricles contract, in order to urge forward the blood into the arterial trunks, the auricles are relaxed and become immediately distended by the current of blood from the veins.

The action of the heart and the vessels connected with it may therefore be considered as having three successive periods. In the first of these, the venae cavae and pulmonary veins pour their blood into the two auricles and consequently cause a diastole of these cavities. Then follows the systole of the auricles, which transmits the blood into the ventricles and constitutes the second period, and lastly, the systole of these latter cavities expels their contents into the arteries.

The contraction of the auricles and ventricles, however takes place continuously and successively one upon the other. The contraction begins at the auricles and

is short and feeble, and occupies the first part of the time of a pulsation, it is immediately followed by a gallop to the ventricles, running forwards from its base to the apex, and constitutes the latter part of the time of a pulsation. Then ensues a short period of repose, during which time the blood from the great veins flows into the auricles in a continuous stream, and after which the contraction of the auricles again occurs. Thus the action of the veins takes place at the same point of time with that of the ventricles, and the contraction of the auricles is synchronous with that of the arteries. The venous blood rushes into the auricles, at the same time that the ventricle fills the aorta.

The impulse of the blood expelled by the aortic ventricle is felt throughout the whole arterial system, and it produces in all arteries, which come within the sphere of the touch and which have an area of not less than

one sixth of a line in diameter, an obvious and perceptible effect, called the Pulse, which is a real state of dilatation of the artery, and which is ascertained to correspond exactly, and to be perfectly synchronous with the systole of the heart. Although the intermitted and pulsating character of the arterial current is principally due to the vigorous and sudden contraction of the ventricles, it is nevertheless materially modified by the elasticity of the walls of the arteries, for it is due to this elasticity that the force of the separate pulsations becomes notably lessened, and gradually fuses them with each other, as the arterial current proceeds outwards. Thus, in the immediate neighborhood of the heart, the expansion of the arteries is sudden and momentary, and the farther the blood recedes from the heart outward, the more uniform is its flow, and the more moderate is the distension of the arteries; and the

current loses much of it intermittent character, and becomes more continuous until it reaches the Capillaries, when this pulsatory character is entirely lost and the blood flows there in a continuous stream.

The number of pulsations in a given time varies infinitely in healthy persons. Age, Sex, and Temperament are the chief causes of these variations, but many other circumstances which constitute the peculiar state of health of each individual, have considerable effect, so that no standard can be settled upon which shall always prove correct. Ordinarily, the average number of pulsations in a healthy adult, is considered to be from seventy to eighty in a minute, but there are persons, when they are quite well have always a pulse from eighty to ninety, and there are others, in whom the pulse seldom rises above sixty. It is said that Napoleons pulse beat only forty in a minute. In early life it is more frequent and may

is normal at one hundred and thirty, and over one hundred and forty in a minute, whereas in old age it is more slow than the average standard which I have mentioned. "Cuelsis, Caribus" its beats are more numerous in the standing than in the sitting posture, and more in the sitting than in the recumbent posture. It is also greater while the process of digestion is going on, than during fasting. In general the pulse is also more frequent in females and irritable persons, than in males, and those of an opposite temperament.

But that which is of paramount importance to a physician regarding the pulse, is its frequency, its regularity, its fulness and its force. In the healthy state, the pulse besides having the proper number of pulsations, is neither hard nor unusually soft; it is moderately developed, of a medium

strength, and perfectly equal, both as regards their pulsation and their intervals.

One of the most important physiological phenomena of the heart is the production of certain sounds. These are two in number and can readily be distinguished by auscultation over the cardiac region. One of these coincides in point of time with the impulse and is synchronous with the radial pulsation, and happens therefore when the ventricle contracts, or during the Systole. It is called accordingly the "systolic sound" or the first sound of the heart. The other of the two sounds, coincides with the diastole, and is spoken of, as the second or "Diastolic sound". It takes place at the instant when the heart reverts to that place and condition in which it had been prior to the systolic movement. These two sounds occur in quick and regular

succession and then follows an interval of silence, after which the two sounds are again repeated &c. They are not however exactly alike. They differ somewhat in position as well as in quality and duration. With regard to the duration of each sound, and the period of repose, physiologists have allotted four tenths of the entire time of a pulsation to the first sound, three tenths to the second, and the remaining three tenths to the period of repose. This order of succession is called the rhythm of the heart. The quality of each sound is also very characteristic one from the other. The first is a long, dull, and booming sound, whereas the second is short sharp and distinct. Respecting the positions of these sounds or rather that portion of the praecordial region over which these sounds can be best distinguished; there also exists a great degree of dissimilarity. The first has its maximum of intensity on the anterior surface of the (heart)

and more audible over the fifth rib, and fifth intercostal space on the left side of the chest. But the second sound is heard with perfect distinctness over the sternum at the level of the third costal cartilage, which is strictly over the situation of the aortic and pulmonary valves. The physical causes of these natural sounds have not until a recent period been intelligibly accounted for.

The second or diastolic sound, being the simpler of the two, is produced mainly if not altogether, by the sudden shutting of the valves placed at the mouths of the two great outlets of the heart. The recoiling blood forces back the semilunar valves of the aorta and of the pulmonary artery, producing an audible check as these fibres become suddenly tense, and therefore yield a characteristic clear and snapping sound.

The production of the first or systolic sound, is more

complex, and is considered to have three elements in its formation, viz: first, the valvular element, or that which is produced by the abrupt closure of the orifices of communication between the auricles and ventricles by the mitral and tricuspid valves, and has in this respect therefore a similar cause with that which occasions the second sound; secondly the impulse of the heart's apex against the ribs; and thirdly, the muscular contraction of the ventricles, for it has been carefully observed, that this sound commences with the tension of their walls, including the valves, and it is prolonged by the muscular noise produced by their contraction.

The Heart being a sort of reservoir of the blood, upon whose adequate supply the well-being of every portion of the body depends, one might suppose that it would receive its own nourishment from the fluid contained within its cavities, by direct imbibition. Although this may be to some

extent both possible and probable, yet it too is nourished like other parts of the body, and derives its nutrition from the Coronary arteries, of which there are the right and the left, arising from either side at the commencement of the aorta; immediately above the semilunar valves, and then entering at the auriculo-ventricular groove, and branching out into the substance of the heart, freely anastomosing with each other anteriorly as well as posteriorly.

The office of the heart is the most essential to life and health, but its actions are completely involuntary, no exertion of the will can produce the smallest effect in accelerating, retarding or otherwise affecting the action of this organ. It is however somewhat under the control of the Pneumogastric nerve and also the Cervical Ganglia of the Great Sympathetic, for various arguments prove that these nerves exert an influence over this organ. The sympathy between the hearts action and nearly every other function, even of different classes, suffices to

demonstrate their connection. The abnormal disturbance of the heart from the passions of the mind, has been experienced by every one. Its action is also strongly influenced by various states and affections of the alimentary canal. It is also intimately connected with the changes which the blood undergoes in its passage through the lungs, for when respiration is obstructed the heart's action ceases.

The dilating cause of this viscus therefore, consists probably in the forcible entrance of blood into its cavities, and the immediate cause of its contraction, arises from the presence of blood in its cavities, producing there an exciting cause, of which irritability is the proximate cause. But the great power of the heart so wonderful, both in extent and duration is subservient to its vital functions.

Feb. 15th 1869.

P. H. R.

1869

An Inaugural Dissertation on Bromide of Potassium Submitted to the Examination of the Provost, Regents and Faculty of Physic of the University of Maryland for the Degree of Doctor of Medicine

By

George H. Crum Hoffman of Maryland.

Potassii, e Bromidum.

"Bromide of Potassium
("According to Leibig, can
readily be obtained, by
dissolving bromine in
alcohol, and adding
potassa until the spir-
-it begins to change color,
then evaporating, and
heating to redness.
"It consists of one eq. of
bromine 78.4; and
one of potassium 39.2
"It is a permanent, colorless,
anhydrous salt, crystal-
-izing, in cubes, or quadrang-
-ular prisms, and having

A pungent, Saline taste similar to that of common salt, but more pungent, and acrid. It is very soluble in cold water, more so in hot, and but slightly so in alcohol.

This agent, like bromine seems to have been applied to therapeutical purposes first by Prouche; who is said to have used it with benefit, both internally and in the form of ointment; in the treatment of bronchocele, and Scrofula.

("In the year 1828.)

"Respecting its effects on the economy; "the action of this agent has been variously stated, and great discrepancy of opinion prevails amongst recent experimenters, and investigations of the subject.

"Thus M. A. V. Laborde concludes from general results of numerous experiments, (with the bromide of potash, on men, & various animals), "that even after the administration of the agent, reflex action is entirely abolished, but the power of

voluntary movement, is retained long after this: that the heart is but slightly, and gradually affected, and contracts for several hours after the loss of reflex power; therefore that the bromide of potash, has no special effect on the heart, muscles, encephalon, or nerves; but that it mainly and primarily influences the Spinal cord.

"We also deduced two principal facts; "the progressive and marked diminution of reflex movements, followed by

complete and persistent ab-
-olition of the sense, and the
entire preservation of voluntary
movements. . . .

Eulenburg, and Guttmann,
have also examined the physi-
-ological action of this sub-
-stance. Their experiments
agree in proving its paraly-
-zing action, on the heart,
and all the central parts, destined
for the conduction of motion and
sensation, in the spinal cord,
and brain. They conclude that
it acts directly on the spinal cord,
(not upon the encephalon) the func-
-tion of which, of presiding over

the reflex action, it would.
By another mode of experiment
-ing, upon frogs, &c, for the purpose
of making known the exact mode
of action, of this agent, M. M
Morton, & Hare, have invalidated
the interpretation of the first named
authors. They gave it in various
ways, Phys. Ther, and Topic Doses.
and arrived at the following conclu
-sions: 1st That the effects are
always direct; whether the re
-gion of application or in other parts
of the system, to which it is carried
by the circulation, or organs by which
it is eliminated, (that it is due to con
-tact with the tissues,) has no elec

-tive action: certain systems being affected before others: Thus sensory nerves lose properties before motor: motor before spinal cord, (muscles) and spinal cord before: That the heart's action is destroyed at late stage. Respiration affected secondarily, minute bloodvessels con-tract, immediately in region of injection; - later throughout organism and contraction succeeded by dilitation. Temperature of warm blooded animals falls very sensibly, at first in region of injection, then every part of body; Secretions of glands diminished in proportion to contraction of bloodvessels. That the anaphrodisiac

power of bromide of potash is due to contraction of minute efferent arteries of corpus, cavernosum

Lastly that it is a poison of no special system, kills all, nerves, and muscles. Therefore defined a general nervo-muscular poison. (Amer. med jour July 1868).

"The following is from Dr. Bill's elaborate article, on the action of the bromide (Amer journal med sci, July 1868.)

Laborde has endeavored to (prove) that bromide suspends the reflex power of the spinal cord, or so to speak, lays on injunction on the department of spinal reflex power. but after a careful examination of

the memoir: we have failed to understand how the spinal cord comes into question at all. Certainly if Labordes announcement, be correct, its correctness is not established by the experiments. "It is not probable that any experiments can ever establish this theory, even if it be true. A fatal objection however to Labordes experiments, and also to those of Guttman, & Eulenberg, is that they were made on the lower animals. No such experiments are of any value in therapeutics, Each tribe of animals has its own peculiar therapeutics. Thus, belladonna and Strammonium, are not poisonous to goats and rabbits. Anstie states that

morphia acts like Strychnia on cats.
The writer knows from observation that the antilope of the plains can eat largely of tobacco. It is absurd then to predicate, that the opertical action of a drug, on man, from even its well known & defined action, on other animals.
All sorts of theories have been proposed and some investigations made to determine the action of this drug; some seat its action in the heart; the pulse however is not affected, by medicinal doses; most refer it to the nervous system; and as the contrary cannot be proved, we might very well so refer it, until such time as the truth is known;

its action like bromide of potash. "Thus chloride of pot, as long ago observed, reduces the quantity of urea, manifestly, and promptly. Iodide of potash, to be sure, increases the chlorides just as bromide does, but the action of the former, on the system is notoriously different from the latter. Nor does bromine have hypnotic effects. Like Chlorine, among other actions it is stimulating to the heart, possibly by creating temporary congestion of the lungs. It appears then that it is the the Salt, which posses the effects under discussion. "Thus when bromide of potassium, meets chloride of ~~XX~~ sodium, Chloride of pot. & bromide of sodium result &c, &c. —

Thus bromide of sodium may remain in the body for a time, in fact until it is displaced with the usual amount of chloride of sodium, ingested with the food. When taken by the mouth, bromide of sodium, in our experience, does not experimentally, produce the same effects as bromide of potassium. Thirst is experienced, as if common salt had been taken; the fæces are not diminished, as when bromide has been taken. We look upon bromide of sodium, as the physiological substitute for chloride of sodium. Chloride of sodium is the antidote of bromide of pot, promptly interfering with the action of the latter. If these are the facts

"the bromide of potassium owes its peculiar power to the fact that it is a salt, to its chemical constitution".

"The Cincinnati Lancet & Observer, contains the following valuable article entitled; "Experimental researches into the action of bromide of potassium" by "Roberts. Esq. Edinburgh. M. D.

"The author's investigations were conducted, in three directions "1st the chemical properties; "2nd the physiological effects; and "3rd the therapeutical uses of the salt. The physiological effects of the agent when taken into the stomach; "Dr. B. sums up as follows; "1st it is irritant in large doses to the mucous membrane of

the stomach "2nd it is rapidly absorbed ... the ~~[illegible]~~ blood, and may be detected, soon after its administration, in the urine. "3rd it acts on the nervous centres, producing sedation, sleep, reduces the action of the heart and arteries, lowers the temperature and diminishes the retrograde metamorphosis of the tissues." "The prolonged administration of the bromide, produces according to Dr. H.B., the following effects :- "1st it diminishes and ultimately entirely neutralizes the sexual appetite : "2nd it produces weakness of the muscular system, "3rd it is irritant to the stomach in considerable doses, and "4th it interferes with the secondary

assimilation; leaving the retrograde metamorphosis of tissue." In regard to its therapeutic uses "Dr. B. extols it, as disinfectant, deodorizing, as an escharotic in sloughing gangrenous ulcers; phagedenic chancres, Hosp. gangrene, &c."

"After a careful survey of the various facts; "Dr. B. gives the following as the Methodus Medici; of the salt in question: "1st the bromide acts by absorption into the blood 2nd its effects are expended upon the nervous centres; or the Cerebro-Spinal axis. "3rd. Sedation of the heart and circulation; and the various local sedative effects are secondary results of the impression made upon the nervous centres; "4th "Its physiologic effects are not

very decided, and are easily modified by any local disturbance." 5th to 11th. Its therapeutical action is still more decidedly influenced by local processes "6th It is indicated where a sedative to the nervous system is required; in insomnia: too great reflex excitability: nervous, and spasmodic affections of the larynx, bronchi; sexual excitement, & irritability of the sexual organs." 7th It will be effectual in the foregoing conditions in proportion to the degree in which structural lesions are absent; in other words, in proportion to the degree in which these morbid states are functional, rather than organic in character.

"Dr. B. asserts that - the bromides, possesses none of the resolvent properties of the Iodides. Whilst this is true; the bromide relieves congestion of certain organs; diminishes their bulk, or produces resolution of an engorgement. "Such action - apparently solvent or resolvent, is not really so, "It has been exhibited mainly in such states of the uterus, and ovaries states of hy peraemia dependant upon sexual excitement; or upon the monthly rising. The apparent resolvent power is in this case dependent, or due to, the sedative impression of the remedy, upon the sexual organs, and upon the vaso-motor nerves.

"Action of bromide of potash in inducing Sleep:" Wm. H. Behrend, ("Lancet.") Extols this remedy in the treatment of insomnia, and restlessness, accompanied by, and dependent upon, nervous irritability. "Dr. Brown-Sequard. first drew Wm. B's attention to this action." Dr. Garrod, also in his recent lectures, States that the bromide, in large doses produces drowsiness. "Dr. B. says that the cases in which it appears most useful, are those in which the nervous element preponderates, and in these for the most part Opium, and its preparations fail to produce a good result; frequently even, adding to excitement, under

which the patient labors. There can be no doubt that cases of this type are on the increase; since the highly artificial mode of life of the present day; especially in large cities, where the nervous energies are perpetually stimulated to the highest degree. "The dose (2½ grs 3 times daily) is easily tolerated, and produces no unpleasant results, save slight, & temporary headache; and irritability of the bladder, - "the frequent accompaniment of restless nights, is greatly relieved. "Dr. Brown. Sequard. has given it in ℈j doses; for several weeks, with perfect safety. "In the succeeding No of this Journal we find the following

confirming the statement of Mr C. H. C. Bechwood. as to the effects of the S. B. in insomnia, and restlessness, caused by nervous irrit-ability;" by Dr S. W. J. Williams. House Surgeon, to the Gen. Lun. Asylum at "Northampton," who administered the agent for 6 mos; in 37 Epileptic cases, all of whom were more or less insane. All the cases but 13 were more or less benefited, but none entirely cured. Dr Williams does not recommend, with so much confidence as Dr B. does; the unfettered use of "ʒss doses; for he says that in sev-eral of the cases "it was necessary to reduce even the average — 10 grs twice daily

"After noting the effects, in individual cases," the author concludes by stating: "that he believes the agent, was productive of evil results in one patient: - On the other hand, considerable benefit has resulted from its use in other cases. That it has powerful influence over the nervous system, & subdues the irritability of Epilepsy; - even though it should fail to diminish the frequency of the fits. "He does not think it of much effect, on the sexual system, but of its power of increasing sleep, in cases dependent, on nervous irritability, "says there can be no doubt, and, from 10. to 20 grs daily, will effect it.

"Dr. Debout; speaking of the hypnotic properties of the bromide; relates several cases of perfect success. "The first mentioned case had administered the bromide, for the purpose of introducing the catheter, - the success of which exceeded all expectation. The most remarkable satisfaction was produced; for the patient, unable to sleep, for a month previous, as soon as he was taken, slept all night." He relates the case of a Medical man, who was unable to ride horseback, on account of neuralgia, of the neck of the bladder. "After a month's trial, lost all painful sensations, and resumed his visits. He proved its hypnotic properties in

another patient, who had to dis-
-continue its use, because 75 grs;
not only procured sound sleep,
during the night, but also kept
him in a state of somnolence on
the next day, so that he was not able
to attend to business.
"A writer in the "Union: Medicale
("1884) denies that the bromide
is a true hypnotic, but consid-
-ers that the bromide causes sleep
by the deep sedative effect it produ-
-ces upon the whole nervous system,
and secondarily on the circulation.
Phthisical patients, troubled with cough-
-ing & sweating; notwithstanding the
use of "Opium: have obtained sleep,

by its use. "He also states that two cases of organic disease of the heart, with praecordial anxiety, and dyspnoea, were relieved, and the pulse reduced from 108. to 76.

"He sums up the properties of the salt, by considering it, a simple moderator of nervous excitement, and states that its elective action, is specialy exerted on the internal integument, the mucous membrane of the throat, pharynx, and genital passages.

"Of the efficacy of this agent in treating puerperile convulsions, we have the following testimony. (from Amer. med Journ July 1867) "The Author, having given a summary of the case, "states

"that from the time of the first administration, to the termination of labor, a period of 21½ hours, she had "Zijss Pro. pot. and never had another convulsion. She remained soporose for a considerable time," then awakened, as from a prolonged sleep, and remembered nothing of the past. The author asks for it a more extended trial, and says: should such another case present itself, he would not induce premature labour but exhibit the remedy at once.

"Same Journ, Oct "68, contains the following," by Dr. J. B. Wood, who says that having noticed the report by Dr. Shoyer, of success; in treating puerp. conv. by Pro. pot. "he has (in a similar case)

"in consultation with Dr. C. Lee.
Exhibited the agent, "Having given a
summary of the case; he mentions
that he would not hesitate to give
the bromide in larger doses, ("then
15 grs each 2 hours") and believes that as soon
as the system, can be brought under
its influence thoroughly, that not
another convulsion will occur.
"In Epilepsy; Dr B Evans ~~thinks~~
thinks it a matter of surprise that the
Bromides have not come into more general favor.
"In no disease have their effects been more mark-
ed than in Epilepsy. He relates cases within
his own knowledge, and has notes of others and ex-
aggrivated cases, so far modified by this trea-
ment, that the patients were enabled to-

begin life almost anew. The cases treated were those forms usually met, and hence cover the whole ground, "1st of parent or known cause, "2nd "congenital, & "last hysbreadl "thinks the field of usefulness of the agent is extensive; that it dispels many ills to which the humane economy is subject.

"M. Bazin adds his testimony, to the above: as to the efficacy of the bro. pot in epilepsy. "Dr Robert McDonald, also confirms the opinions of "Dr. Chas. Locock. "Dr. Brown Sequard, Dr. C. B. Radcliffe and others, as to the efficacy of bro. pot in certain cases of epilepsy. He relates cases, and concludes that these with others of a similar character have led him to the belief that it is of value in epileptiform disease.

connected with uterine derangement, but admits that it will not succeed in all cases of this kind. "Dr. Bill holds the following views respecting the action of bromide in epilepsy. We can (he says) readily account for its beneficial effects, if the excentric origin of disease, is, (as stated) in the mucous membrane, of the alimentary canal, or genito-urinary cavities. "A large No. of the cases have just this origin. Bro pot. has power to interrupt transmission, of irritating impressions to the spinal cord in epilepsy, just as we have shown how it may interrupt the transmission "to the cerebrum, in wakefulness, or just as a ligature may by postponing the Aura —

"In Laryngitis, & bronchial affections, Dr. A. "Lublen: recommends its employment:

in esophageal spasm, hysteria, spasmodic cough, Chorea, & other nervous disorders, hearts disease, &c &c; "further that it exerts a most favorable, & modifying influence, in coryza, angina painful deglutition &c. "Even spasmodic paroxysms of coughing, which so distress persons with "Laryngo-bronchitis, & pulmonary consumption, are most favorably modified.

"Various, & peculiar, have been the views; relative to the effects, & value of this agent: "The following however, are generally conceded to be most reliable: "It is less alterative than Iodide; (in consequence of which it was once omitted in the "Brit. Pharm.). Its chief value is manifested, by its controling influence over nervous affections; as Epilepsy, Delirium remens; irritability of the respiratory, & genital organs; anaphrodisiac properties &c

"Dr. Hanfield Jones; thinks it acts on calibre of capillaries, and diminishes circulation in the brain.
"Dr. Brown Sequard": thinks it diminishes the capillary calibre, & rapidity of circulation; as belladonna does, hence actions, supposed to be closely allied, to each other;
"The difference in action of Opium, and bromide potash, is that the former, is more uniform: diminishes oxidation; as evinced by dry tongue, stoppage of secretions &c: which does not occur when the bromide is given, which promotes oxidation, by combining with hydrogen. "The bromide then acting by promoting contraction of capillaries, accounts for its superiority to Opium in treating headache, accompanied with congestion; morbid wakefulness, &c
"Delerium tremens; "Specialy the 1st, & milder

stages, attended with sleeplessness &. loss of appetite, and other characteristic phenomena. the average dose, 20 to 30 grs; is often productive of most satisfactory results. It is however not so reliable as opium in latter stages attended with spectral delusions &c.

", Its value in irritability of respiratory & genital organs, - mucous membrane of pharynx, larynx, - various affections of bronchi, spasmodic asthma, reflex irritability of fauces, & urethra, "probably due to its virtue of lessening the amount of blood, recieved. Great benefit is derived from its use in Satyri-asis, undue sexual excitement, frequent occurrence of seminal emissions, Gonorrhoea accompanied with Chordee, or after phimosis; & other sexual derangements of genito-urinary passages.

"Associated with belladonna, it is one of the best agents we possess, in treating incontinence of urine, in children, irritability of bladder &c. "In this connection, I will mention its well-known value as an antaphrodisiac, in cases of nymphomania, and other affections attended with, and dependent upon, undue excitement of these organs,

"The bromide was first used in treating epilepsy, because thought to act as the iodide by removing pressure from the brain &c;

" but not now thought so to act; but by controling nervous element. It is by most Authorities thought to be the best known agent in treating this affection

"Thus Dr Radcliffe thinks it the most important agent; in doses of 20 grs

three times a day; - ing continued:

"Its effects are most certainly ascertained when faithfully used, and its employment long-continued; = that no effects on the minds of patients may account for any change. "Cases reported as not benefitted counted for by too small doses, being employed, or for insufficient length of time. — — — — — —

"It may be well for us to bear in mind, that this agent; is not claimed to be, a specific, + an infallible remedy; nor yet the "Sine Qua Non" in the treatment of all types, & shades of disease: - for reasoning: thus "Its - reputation; "Our anticipations, and the "success of both; "Will like the chimneys from the air-castles of the fanciful; = fall to the ground . . . . . .

"Ere the Superstructure is completed"

1869

An Inaugural Dissertation on Dislocations.

Submitted to the examination of the Provost, Regents & Faculty of Physic of the University of Maryland for the Degree of Doctor of Medicine.

By W. T. Paul, of North Carolina.

Introduction:-

By way of preface, I will simply state that, in the preparation of this crude and imperfect sketch of a very extensive subject, I have been aided, in addition to the lectures from our distinguished professor of Surgery, chiefly by the works of Gross and Fergusson.

Dislocations:-

General Considerations:- The term dislocation, as applied to joints, signifies a displacement of one articular surface from another; it is (so to speak) a solution of continuity. The proximate (to the trunk) bone is assumed as fixed, and the distal is considered as dislocated from it. (Varieties:-) - Dislocations may be -

simple — "ie" — independent of any other lesion; — complicated — that is with fracture, or laceration of important soft parts; Compound, — when the violence has been so great, that the joint is exposed; Complete — where the Articular — surfaces are entirely separated; Incomplete — where the displacement is only partial. Both extremities of a bone may be disjointed, — constituting a double dislocation; this frequently happens to the Inferior maxillary. Dislocations are also spoken of as recent, or old. The duration of the accident is of great importance in deciding the question as to the advisability of an attempt at reduction; this is possible at a much later date with enarthrodial, than with ginglymoid articulations Sir Astley Cooper gives three months as the limit in the Shoulder, & 6 weeks in the the hip. Fergusson has never succeded in the

latter after 3 weeks. The late Dr Nathan Smith reduced a dislocation at the Shoulder of more than a years Standing.

Predisposing Causes. Youth & old age are less obnoxious to dislocations than middle age, from opposite reasons. Young bones are supple, and either yield to force, or give way at the epiphyses; old bones are fragile, and fracture is more likely to happen. For example. Aged persons we have fracture of the neck of the femur, rather than dislocation of the hip joint. The more varied and extensive the motion of a joint, the more liable it is to luxation. Thus the ball & socket joints suffer most often.

Exciting causes. Muscular contraction, and external violence are the two great agents in the production of dislocations. Muscular contraction alone rarely gives rise to this accident,

"though" it undoubtedly sometimes happens with with the lower jaw & shoulder. Some persons have the power of producing, at will, dislocations more or less complete. External forces may be applied directly, as when a blow on the top of the shoulder knocks the head of the humerus into the axilla, or indirectly to the distal extremity, thus the shoulder may be dislocated by a fall on the elbow. Frequently the shaft of a bone is used as a lever, and the articular extremity forced out of its socket. External violence acting in this way is sometimes assisted by a spasmodic jerk of muscles.

Symptoms. The most striking symptom is deformity; first of the joint itself. There are unnatural depressions & elevations, with loss of relation between osseous joints; Secondly of the limb, a long bone is flexed or extended, and generally twisted on its own axis,

presenting a characteristic unnatural appearance. Loss of function - Not only is the power of voluntary motion suspended, but the limb is fixed and the Surgeon can move it only in certain directions. The character and amount of pain will depend upon the nature of the tissues, and the extent to which they are stretched, or pressed upon. Where the shoulder is injured, numbness of the hand is an important symptom, for it not only shows that there is probably dislocation, but it also indicates that the head of the humerus is in the Axilla, pressing upon its plexus of nerves. Measurement between bony landmarks will indicate variations from proper distances.

Diagnosis. - The question is generally between dislocation & fracture; the only real difficulty is where the fracture is very near, or into the joint, as in fracture of the neck of the thigh bone. The

chief diagnostic differences are in fracture, the ability on the part of the Surgeon to move the limb freely in any direction, and the crepitus developed by that motion; the history of the case, age of the patient, and character of the violence must all be taken into consideration. Many cases of dislocation, especially of the elbow & ankle, are complicated with fracture, in these, the exact diagnosis is obscure particularly if swelling has supervened.

Morbus Coxarus has been mistaken for dislocation of the hip, and efforts made at reduction, to the great detriment of the patient; the absence of violence sufficient to have produced luxation, the mode of inception, and the duration of the disease distinguish it from dislocation. In advanced hip joint disease, spontaneous, consecutive, dislocation upwards does sometimes take place, from Caries of the rim of the Acetabulum.

Anatomical lesions.—In every dislocation, there must be more or less rupture of ligaments; these tissues possess little or no elasticity, therefore in complete displacement, some of them must give way. Capsular ligaments are generally torn extensively: Muscles, nerves, and blood-vessels are stretched or lacerated.

Prognosis.—With the aid of chloroform, reduction of recent dislocations is generally easy, and without little danger to life or limb. In the great majority of cases, the patient may be told that, with moderate care, recovery will be nearly perfect, and probably permanent. A united fracture is said to be the strongest part of the bone and it is rarely broken twice at the same point; in dislocations the reverse obtains, the joint is weaker, and more liable to recurrence of the same accident. The prognosis of Compound & complicated dislocations

depends, to a great extent, upon the gravity of the accompanying lesions. If a dislocation of an enarthrodial joint remains unreduced, the original socket becomes, in course of time, to a certain extent filled up and obliterated, a new joint is formed, and the ultimate result may be a very useful limb, a credit to the V. M. N. an opprobrium to M. L.

(Treatment-) The indications are to restore the parts to their proper position as soon as possible; to keep the joint at rest for a time, in order to allow the ruptured ligaments to unite; to prevent undue inflamation; and to restore function. The obstacles to reduction are organic, and functional organic. The return of the bone may be obstructed by osseous elevations, as the condyle of the lower jaw by the zygomatic process of the temporal, or the head of the femur by the rim of the -

acetabulum. In the ginglymoid joints the enlarged ends of the bones become locked and are perhaps retained by the lateral ligaments. The rent in the capsular ligaments, though generally extensive, may be so small as to interfere with the return of the head. Fergusson found in a dissecting room, an old case, in which the head of the humerus had been returned to the glenoid cavity but outside of the capsule which was flattened back. The one functional obstacle is the contraction of muscles incited by unnatural position and tension. This latter difficulty can be entirely subdued by the use of chloroform, or, perhaps, Nitrous Oxide Gas, pushed to complete relaxation; then the dislocated extremity may be pulled, pushed or lifted over the bony projection, and restored to its proper place. In old cases adventitious adhesions

may constitute an obstacle, and require to be broken up. Reduction of dislocations may be effected by extension & Counter extension, aided, perhaps, by manipulation, or by scientific manipulation alone. The day of pulleys has past, Chloroform having removed the chief obstacle which they were intended to overcome; Prof. Gross says that he has not used them for several years.

Generally in dislocation of the shoulder, and frequently in that of the hip, a sufficient amount of extension, and Counter extension may be made with the hands & heel of the Surgeon, the latter placed in the Axilla, or perineum — extension may be facilitated by attaching a broad bandage with a clove hitch to the limb, tying the ends together and throwing the loop over the operators shoulder, by leaning back, power is increased. Where greater force is required, an Axillary or perineal band (padded)

may be tied to a fixed point, and extension made by assistants pulling on a strong bandage fastened (over a roller) to the limb. The Surgeon is then free to use manipulation or make transverse traction. The more modern & fashionable mode of reduction is by pure manipulation. Professor Gross gives Drs H. M. Smith, W. W. Reid the credit of perfecting this method as applied to the Shoulder & hip joints; though in regard to the latter class, he distinctly states that similar manipulation had been long before taught and practised by Dr Nathan Smith of New Haven, & his son N. R. Smith. When manipulation alone is used, one object being to make the muscles assist in replacing the bone, it is a question whether chloroform should be pushed to complete relaxation or not? At any rate, Anaesthesia should (if the

patient desire it) be produced. In old dislocations care and judgement are required in deciding as to the advisability of attempts at reduction. After reduction the joint should be kept at rest, and an anodyne evaporating lotion kept applied. If stiffness remains, passive motion, and friction with a stimulating liniment will assist in restoring function.

Special Dislocations

Dislocation of the Temporo Maxillary Articulation.

The Condyle of the lower jaw can be displaced in only one direction — forwards, & downwards. It is more frequently double but sometimes unilateral.

Causes) — This accident usually happens when the jaw is widely depressed (as in gasping

or vomiting) in this condition spasmodic action of the muscles of Mastication forces the Condyles over the eminentia Articularis into the — Zygomatic fossa; this sometimes occurs in — epilepsy; a blow or fall on the chin, while the mouth is stretched open, may give rise to this lesion; it has been produced by the — attempt to crack a nut.

Symptoms) — The deformity is great and very characteristic; the mouth is widely opened; the chin protruded, and fixed, when the luxation is single, it is pushed to the opposite side; the — Saliva dribbles out; speech and deglutition are much impaired; a vacuity exists at the — glenoid cavity in front of the ear, and the — coronoid process may be felt under the Zygoma

Reduction is generally easy, and more dangerous to the Surgeon than to the patient. The simplest method is to introduce the thumbs (well padded)

far back on the Molar teeth, press downwards and backwards, and at the same time (with the fingers) elevate the chin; the thumbs acting as fulcra reduction is effected. Corks or other semi-soft substances may be pushed back, and the jaw used as a lever. The use of Chloroform will facilitate reduction & obviate the risk of the thumbs being bitten. The jaw should be kept at rest for some time, the patient living on soups &c., in order that the Capsular ligaments may unite. Dislocation of the phalangeal Articulation may occur forwards, or backwards, very rarely laterally unless in compound injuries. Luxation at the Metacarpo phalangeal joints is more frequent than the last mentioned. Reduction in all these cases is to be effected by extension, and direct pressure against the dislocated extremity. The dislocation of the phalanx of the

thumb from the metacarpal bone deserves special mention on account of the difficulty generally experienced, in its reduction. The character of the injury is easily recognized; extension may be facilitated by the application of a clove hitch to the member, & a counter extending band across the palm. Where this method fails, it is recommended to extend the phalanx until it stands perpendicularly on the metacarpal bone, then to press strongly from behind forwards against its base, and, at the same time, to flex the thumb. The bones of the Carpus cannot well be displaced one from another except by such violence as to give rise to Compound injury. Where the bone is exposed and it cannot be replaced, it may be advisable to remove it.

Dislocation of the wrist. The Carpus is very rarely dislocated from the fore-arm;

the force which would be sufficient, generally fracturing the lower portion of the radius. Displacement may however take place backwards, or forwards; in both cases there is a large hard tumor behind, or in front; when backwards the fingers are flexed, when forwards extended. Reduction is effected by extension aided by pressure against the displaced bones. Dislocation at the Superior radio Ulnar Articulation is rare as an uncomplicated injury. The head of the Ulna may be thrown in front of or behind the radius. The dislocation backwards is the most common; it results from violence inflicted during strong pronation. The head of the bone lies across the radius, and can be readily felt; the forearm is in a state of fixed pronation. (Treatment) — the forearm is to be flexed, and forcibly supinated, pressure at the same time being made against the head of the Ulna. The dislocation forwards is seldom

seen; it results from violence received while the hand is supinated, In reduction the hand should be pronated. After replacement the parts should be kept in situ by means of a pad & bandage.

Injuries of the elbow joint are very numerous and frequently complicated; An exact diagnosis often requires great care and patience. The head of the radius may be dislocated in front or behind the external condyle of the humerus; the former more frequently. It results from falling on the palm of the hand. The forearm will be slightly flexed, and the patient cannot raise his hand to the shoulder; the head can be felt in front of the elbow and made to rotate under the finger.

Reduction is accomplished by semi flexing the forearm making traction and supination, also pressing the head outwards. In dislocation

backwards, the head of the bone is felt behind the Condyle, the forearm is in state of fixed formation. This injury may result from a direct blow in front of the elbow. The method of reduction is similar to that employed in the other variety. Owing to the rupture of the Orbicular ligament these accidents are liable to occur, therefore a bandage should be kept applied. Both bones of the forearm may be dislocated from the humerus backwards, forwards, or laterally. The dislocation backwards is the most frequent; it results usually from falls upon the hand.

(Symptoms) — The forearm is semiflexed, and fixed; the Olecranon projects behind, and the Condyles are felt in front; the Anterior surface of the forearm is shortened. This Accident is frequently complicated with fracture of the Coronoid process. Reduction in recent cases, is easily —

effected, either by grasping the arm just above the joint with the left hand, and making extension with the right, then first flexing and afterwards straightening the limb, or counter extension may be made by the Knee of the Surgeon while he draws upon the forearm. The dislocation forwards is rare; it is generally preceded by fracture of the Olecranon, but it may happen without. The usual cause is a fall or blow upon the back of the elbow. The Symptoms are the opposite of those in the former variety; the forearm may be slightly flexed, but it can readily be extended even backwards; a vacuity will exist between the Condyles of the humerus; the posterior surface of the forearm is shortened.

Reduction is accomplished either by flexing the forearm at a right angle with the arm, putting the Knee in the bend of the elbow, and making traction, or by extension, the limb being straight,

and pushing, with the thumbs, the heads of the bones backwards. Complete dislocation sideways is scarcely possible, partial displacement may be effected by opposite forces acting laterally. After reduction the joint should be retained at rest, if complicated with fracture of the Olecranon, the limb should be kept extended, if the Coronoid process has been broken, the forearm ought to be kept flexed. In severe compound complicated injuries excision of the heads of the bones may be advisable, in preference to amputation.

Dislocations of the Scapulo Humeral Articulation

The head of the humerus may be dislocated downards into the Axilla, forwards under the Pectoralis Major, backwards on the dorsum of the Scapula, (partially) inwards against the Coracoid process, and (partially) upwards, owing to the escape of the long head of the biceps tendon from its groove.

The three complete dislocations) — the Axillary, thoracic, & Scapular, are easily recognised. The first into the Armpit, is much the most frequent; because the under part of the joint is the weakest, not being protected by muscles, and also for the reason that when the arm is thrown out, the humerus acts as a lever.

(Causes) — This injury results from force applied to the hand or elbow when the limb is elevated, or in this position a direct blow on the top of the shoulder may produce it; cases are recorded where muscular contraction alone (as in epilepsy) has given rise to — displacement.

(Symptoms) — The principal ones are flattening of the shoulder; projection of the arm from the side; the absence of the head of the humerus under the acromion, and its presence in the axilla;

pain in the armpit and numbness of the fingers; Measurement reveals greater distance than natural from the Acromion to the Olecranon. The Thracic or Subclavicular variety is produced by violence applied to the hand, or elbow while the arm is lifted & carried behind the line of the body, or by a blow on the outer, & posterior surface of the Shoulder.

(Symptoms) – The elbow projects outwards and backwards; the prominence of the Acromion is more marked than in the last form, on account of the twisting forwards of the deltoid; the head can be felt under the Clavicle; the arm is shortened. The dislocation backwards on the dorsum of the Scapula results from a fall or blow on the elbow when elevated, and adducted; or from direct violence, received while in this position.

(Symptoms) — The arm points inwards and fowards; the head of the humerus may be detected under the Spine of the Scapula; and there is shortening of the arm.

(Reduction — The oldest, simplest, and (to the novice) the easiest mode is by extension, counter extension being made with the heel of the Surgeon in the Axilla, which also acts as a fulcrum when the arm is carried across the body. The power of extension may be increased by a fillet attached to the arm and thrown over the neck and shoulder of the operator. In this way, when the muscles are thoroughly relaxed, either variety of these dislocations can generally be reduced. The knee may, in some cases, be successfully used instead of the heel, and the shoulder moulded over it. Reduction in all these cases may be effected by manipulation,

without extension — Simply twisting the humerus inwards, using the forearm as a lever, then bringing the arm to the side sometimes succeeds; or the — Surgeon standing behind the patient may fix the shoulder with his left hand, and gradually lift the Arm to the Side of the head.

Dr. Henry H. Smith's manipulation, as given by Prof. Gross, "consists in first elevating the arm, and flexing the forearm; secondly, rotating the head of the humerus upwards, outwards, and backwards, as far as possible, by using the forearm as a lever; and lastly, rotating the head of the bone strongly upwards and inwards, by a reverse — movement, while the elbow is brought to the side, the palm of the hand looking down instead of up, as in the second stage of the preceding."

The thoracic and Scapular varieties must as a preliminary step be converted into the Axillary.

After restoration the forearm should be kept in a sling.

The Clavicle may be dislocated at either its Acromial, or Sternal extremity. At the Shoulder, it is thrown above, or below the Acromion; at the Sternum, it may be dislocated above, in front, or behind the breast-bone. These injuries are the result of falls on the elbow or shoulder, or direct violence such as blows or kicks.

Symptoms - The clavicle being subcutaneous, the character of the injury is to be made out by tracing the bone with the finger; in the most frequent varieties the head of the Clavicle will be felt; in the one case, above the Acromion, in the other, in front of the Sternum; in fracture there will be deformity and shortening of the bone, which are absent in dislocation; the limb is closer to the side than natural. Reduction is effected

by drawing the shoulder outwards and backwards, the arm and forearm being flexed, pressure at the same time being made against the displaced head.

It is difficult to retain the part in position; an apparatus such as is used in fracture of the clavicle with an additional pad may be employed, or simply a sling for the forearm. In either case some deformity is likely to remain.

Simple dislocation of the phalanges and metatarsal bones are rare. The symptoms and treatment are similar to those of corresponding joints in the hand. The Astragalus is sometimes, by extreme violence, dislocated from between the extremities of the bones of the leg and the OS Calcis. It is generally pushed forwards, very rarely backwards. The bone can be felt in its Abnormal position; Attempts may be made to push it back, the foot-

being strongly extended, When the dislocation is compound, and the bone cannot be replaced, its removal is recommended. Dislocation of the Ankle joint though rare is more frequent than that of the Astragalus. The foot may be dislocated backwards, forwards, inwards, or outwards; in all of these varieties, especially the lateral, one or both of the Malleoli are likely to be fractured. The character of the deformity will when, the case is seen early indicate the nature of the lesion. The most frequent variety is dislocation outwards, with fracture of the fibula a little above the joint. The foot is turned outwards and the head of the tibia projects. This injury is spoken of as "Potts fracture".

Reduction of Ankle joint dislocations is to be effected by extension and direct pressure, the Gastrocnemius being relaxed by flexure of the leg.

These injuries are frequently compound and complicated, when excision or amputation is generally demanded. When practicable, Syme's or Pirrogoff's operation should be preferred to amputation above the joint.

Dislocations of the Tibio fibular joints are exceedingly rare; The head can be readily pushed back, but it is difficult to retain it in position. The patella may be dislocated outwards, inwards or upwards, (by rupture of its ligament) a few cases have been reported in which it has rotated on its own axis and presented edgewise.

{Symptoms}, — A depression exists in front of the Knee and (in the first two forms) the patella is felt outside of one of the Condyles; the limb is straight, and cannot be bent without effort.

{Treatment}. The thigh is to be flexed on the Abdomen and the leg fully extended, the bone is then to be pushed laterally into its place

If the accident occurs readily an elastic knee cap should be worn. When the ligament is ruptured and the patella drawn up, the treatment is the same as for fracture of that bone.

Dislocations of the tibia femoral Articulation

The tibia may be dislocated from the condyles of the femur forwards or backwards and partially inwards, or outwards. The great deformity will establish the diagnosis. These injuries are very dangerous from the amount of Articular surface involved, and the liability to inflamation as a result; where the condyles project backwards, rupture of the popliteal artery is possible.

Reduction is accomplished by counter-extension at the perineum, and traction from the ankle or upper part of the leg, aided by direct pressure against the luxated extremity. In Compound dislocation, especially with fracture of one of the condyles, —

amputation is the safest resort, though, under favorable circumstances, resection may be performed.

{Dislocations of the ilio femoral Articulation}

There are four complete dislocations of the head of the femur, — upwards on the dorsum of the ilium; backwards, into the Sciatic notch; — downwards into the thyroid foramen; forwards, on the os pubis.

The iliac variety is much the most frequent; it results from a fall on the foot or knee when the limb is adducted and carried forwards, or from a blow with a heavy body on the hips while the body is inclined forwards and the limbs separated.

{Symptoms} The trochanter is unusually prominent, and nearer to the Anterior Superior Spinous process than natural; the head can probably be felt on the dorsum of the ilium, the limb is from 1½ to 2½ inches shorter; the thigh

slightly flexed; the knee somewhat advanced and inclined over the lower third of the sound thigh; the foot is extended and everted, the toe resting on the instep of the other foot; the thigh may be flexed to a certain extent, but other motions are suspended.

The only lesion with which this form of dislocation is likely to be confounded, is fracture of the neck of the thigh bone. The chief diagnostic differences are that, in the latter, the trochanter is less prominent than natural; the foot is everted; the limb can be moved in any direction and crepitus probably developed thereby.

The Sciatic dislocation results from violence inflicted on the foot or knee while the body is inclined forwards. Its symptoms resemble those of the iliac variety — the trochanter is unnaturally prominent, and still further removed from the Ant. Sup. Spinous process; the head may perhaps

be felt in the sciatic notch, a little above the tuberosity of the ischium; the limb is shortened 1/2 to one inch; the thigh is less flexed and the knee crosses the limb lower down than in the iliac dislocation; the foot is also everted, as in the last-mentioned variety, and the great toe rests on the ball of the corresponding one.

The thyroid dislocation is caused by falls upon the foot or knee, when the thigh is widely abducted and inclined backwards. The symptoms are directly the reverse of those just described — the hip is flattened; the limb lengthened 1 or 2 inches; the thigh abducted; the knee somewhat advanced, and the foot slightly everted.

The pubic variety is the rarest form of hip dislocation; it is produced by falls with the thigh moderately abducted and extended, or by the sudden throwing back of the body, as when

the foot is caught in some obstacle.

{Symptoms} - The limb is shortened about one inch; the knee advanced, and the foot-points directly outwards.

{Reduction} - Until the general introduction of Chloroform, Warm baths, Tartar emetic and venesection were employed to relax the muscular system; ingenuity exhausted itself in the invention of mechanical contrivances, by which the greatest amount of force might be gradually and safely applied. At the present day, when Chloroform is pushed to ~~ph~~ thosis, pulleys, especially in recent cases are rarely or never required.

The iliac variety is usually reduced by ——

Dr. W. W. Reid's method of manipulation, as was done recently by Prof. N. R. Smith in a at the Baltimore Infirmary. The operation, according Word, consists of three stages ——

1st. The leg being flexed on the thigh, and the thigh on the pelvis, the limb is carried across the sound one, and the knee over the abdomen as far as the umbilicus.

2nd. The knee is turned outwards on a line with the side.

3rd. The foot is carried across the sound limb and the knee pushed downwards and backwards, and the thigh gently rotated.

Prof. Gross says that this method of reduction is applicable to the other varieties as well as to the iliac. These dislocations may sometimes be reduced, as in shoulder joint cases, with the heel in the perinæum and the extending force increased, if necessary, by a bandage fastened above the knee, and the loop over the shoulder of the Surgeon; rotating the head by using the leg as a lever may facilitate reduction. When the head lodges against the rim of the —

Acetabulum, it should be lifted over by means of a towel.

In the sciatic dislocation transverse traction is especially necessary in order to disengage the head from the notch; extension being kept up by an assistant with his hand in the perineum, or the pelvis fixed by a band, the Surgeon may pass a bandage around the upper part of the thigh ending in a loop over his shoulder, he steadies the pelvis with his foot and leg leaning back draws the head outwards. The same means somewhat modified are to be employed in the thyroid and pubic forms.

When simpler means fail, the pelvis is to be fixed by a counter extending band and extension made in the direction indicated, either by assistants pulling on a bandage applied to the limb, or by pulleys; the surgeon then supplies whatever

accessory force may be required.

After reduction the joint should be kept at rest for about 3 weeks.

AN

Inaugural Dissertation

ON

Changes of the Food in the Blood

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Geo. O. Johnson

Of

Wyoming, Iowa.

Session of 1867-68.

Gentlemen;

Permit me to present to your kind consideration the changes of the food and blood with a few of their morbid changes beginning at the time the food is taken into the mouth and following it through its successive changes till it becomes a part of the general system, being converted into the tissue of the body; The first change perceptible to the food is at the time of mastication, when the salivary glands

viz parotid submaxillary & sublingual, in performing their function toward digestion pour out their secretion to lubricate and make easy the maxillary action as well as to enter into the more necessary function of chemical change. Thus we see nature throwing out an excretion to facilitate in the change from the crude state and preparing it for its next more finer process after it reaches the stomach by its becoming more fitted a receptacle to receive the action of the gastric juice and convert

it into its chymified State.

Upon its reaching the Stomach it undergoes the first change of digestion: for by the Stomache muscular action, it is churned back and forth, from Side to Side, like it becomes thoroughly mixed; at the same time the gastric juice, which is the chief aid to digestion and is secreted in the inner walls, or lining membrane of the Stomach, is poured in and as it possesses such remarkable Solvent power, capable of digesting both animal and vegetable

matter in the human being. It converts the food almost immediately into a grayish pulpy fluid called Chyme: In this chymified state, it is entirely reduced from its crude and bulky constituents to a thin watery fluid before it can be exuded through the pyloric orifice into the Duodenum there to receive its separating process, while the nourishing portion is taken up by the circulation and carried through the System to sustain life, and the remaining carried

ff by the Alimentary canal:

But one remarkable feature in this process: ie. no food is permitted to pass from the Stomach until it becomes thoroughly converted into Chyme; my object in referring to this point is two fold: first the food must remain there for an indefinite period, or Sec. the Stomach must be in a condition to perform its function and carry it ff. After it is reduced, it passes into the Second division of the Alimentary canal, called Duodenum, before referred to: there

it is mingled with two other ingredients, both powerful agents toward separating the nutritious from the innutritious food.

The Bile a dark green bitter alkaline fluid which is secreted by the liver, and the pancreatic juice, which in constituents resembles the Saliva, is conveyed by ducts or tubes from their respective origin to be the instrumentality of this wonderful Separation:

Immediately after the Chyme becomes mixed with these fluids it begins to separate into two

distinct portions, one which is the chyle, or nutritious part consisting of a white milky fluid and having all the constituents of blood except in color: the other, the refuse portion consisting of no particular nutriment to the general system, is conveyed off by the alimentary canal: while the former is taken up by an immumerable amount of little vesicles called lacteals which convey it to the thoracic duct a long tube, nearly the size of a goose quill that runs up along

the Spine; the chyle is conveyed through this and emptied into the left Subclavian vein back and above the heart at a point just under the left clavicle near the neck; here it becomes mixed with ve nous blood and conveyed to the right Auricle from whence it passed into the right ventricle and is conveyed through the pulmonary artery to the capillaries of the lungs, then returned to the left Auricle and passed into the left ventricle from whence it is distributed to every

part of the System.

Thus we see that the general course of circulation is in perfect unison, conveying alike to all parts the necessary elements for its nutrition; and although any one may debar it progress and arrest circulation, Still the one great ingredient for the sustenance of the human frame is good nourishing food active digestion, and at stated times, to give the different organs sufficient time for rest to gain their wonted tenure, before being

taxed by the amount of food next taken.

Before taking up the consideration of the lungs, let me call your attention briefly to two other important organs in the formation or rather the purification of blood, namely, the Spleen and Kidneys

The former at the present time is conceded to be an important assistant to the portal circulation but in what way is not very accurately understood, yet it is inferred from what is now known that it is a receptacle for a surplus

of blood which the System acquires but cannot be admitted without danger to the blood vessels in general; this conclusion is drawn from the fact that the Spleen rapidly increases in bulk after the injection of a large quantity of fluid which is absorbed rather by the veins than by the lacteals.

Also in animals where the Spleen has been removed they are very apt to die of apoplexy if they take a large quantity of food at a time; but be its office what it may, it nevertheless

is known to figure very conspicuously in several important diseases which must necessarily act deleteriously to the circulation.

The office of the Kidneys is better understood and known to be the principle Stimulus for elimination, that is all animal substances have a tendency during decomposition to throw off nitrogen as well as carbon, and this nitrogen may take the form of Cyanogin and pass off in combination with Carbon or else that of ammonia by

uniting at the time of liberation with hydrogen; At this time the Kidneys are known to separate these azotized products of decay from the circulating fluid: for this secretions which is a characteristic of them namely urea contains a larger proportion of nitrogen than is found in any other compound: Their action are Equally essential to the performance of the vital function, as the Lungs and liver, and death will ensue, almost as quick, if any deficiency in their action, will

leave a large amount of Urea to be carried into the circulation.

I have already traced the use of the "Thoracic Duct" in conveying the chyle to mingle with the venous blood, therefore will save repetition, by at once taking up the discussion of the Lungs. And I shall be more minute in its detail than I have been with some of the organs necessary to the circulation, as the structure of that important organ is of such a texture as to make it very accessible to morbid changes:

neither are these changes to be
wondered at when we take into
consideration their anatomy and
the duty they have to perform:
look for a moment will you at
the two direct opposites in their
formation; one having the strong
arterial action to sustain the
pressure of blood, which is all
that flows through the system,
and constitutes one eighth of
it; While the other is a dry
spongy and elastic material
having the power to expel the
air which is forced upon it and

throw off the morbid accumulation of matter that is taken up and carried to the lungs by the circulation; It was found by the kidneys that nature went to to get rid of a large surplus of Nitrogen: So it is through the lungs, that she goes to work to throw off a large amount of Carbon which is accumulated in the circulation and conveyed to them there to be expelled: This process is accomplished by bringing this effete matter, or Carbonic Acid, in contact with oxygenized air

which is inspired at the time,
and as they commingle, the poi-
nous effluvia, being the lighter
of the two is forced away by
expiration, while oxygen takes
it place in the circulation: Up
to this change the blood is of a
dark venous cast, but as it becom
filled with oxgen, its texture
becomes a bright arterial red,
which is conveyed to the heart and
by whose muscular contraction it is
forced throughout the different
parts of the body: of this impor
tant organ, the Heart, I have but

little to say, as it distributes the blood, instead of assisting in its formation: I will next, then take up the consideration of the changes of blood to tissue: The arteries are the channels through which the circulating fluid passes in its outward course, but their walls are so firm, and unyielding, and it passes with such rapidity, that, there is but slight change in the blood, while it receives the minute capillaries. Up to this time, the fluid is composed of plasma with

red corpuscles floating in the centre. these red corpuscles it is supposed carry the Oxygen and Iron, but the plasma, the fibrin and tissue making substance; when it reaches the capillaries instead of getting through with the same impulse as it does when passing through the larger and middle sized tubes, it moves extremly moderate, only flowing at the rate of one inch per min.; and here is conceded to be where the cell of nature for

new material is supplied;
owing to the thinness of their walls
and having but little contractile
power. the substance which has
become fitted for this supply ooze
through, as it were, thus, renewing
all parts as soon as any drain
has been made, for these capillaries
are distributed to every part of
the organization.

Respectfully submitted
this 15 day of Feb. A.D. 1867.

by

Geo. O. Johnson

1869

AN

Inaugural Dissertation

ON

Facial Expressions Aids in Diagnosis

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

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FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

George Henry Evans

Of

Anne Arundel County, Md.

Session of 1869

Special Expressions as Aids in Diagnosis

" — "

A man on his stage from home, bewildered by the strange scenery around him, with a heavy heart, and an aching brow looks eagerly, wistfully for some kind friend to take him gently by the hand and lead him back to old familiar scenes, devoid of hope the troubled waters surge his inmost soul, and pressing back the barriers of restraint ameliorating anguish; devoid of hope he travels on; through fields and woodlands, pausing at each well beaten path, to wonder on the difficulties to be encountered, purchase the happy terminus.

With feelings somewhat allied to these amid the varied scenery, which an aggregate of beautiful

sciences present to view — The hoarded
wealth of great minds left us as a legacy
The gentle droppings from the Store Houses
of intellect into fertile Soils, and the sub-
sequent glorious fruits in the discoveries
of Harvey Sumner and others, we confess
ourselves lost, and bewildered, and with
throbbing heart and aching brow, no
kind friend to lift the veil and tell
what lies beyond. we pause at the path
laid down before us, "Facial Expressions
Aids in diagnosis."

Loving the theme
we bow the humble head of reverence, ack-
nowledging it the master, yet loving
still the rich food for thought in human
face expressed. We design would summon
home our scattered thoughts, and chain
them down awhile,

Oh! human countenance

Sublime! what art thou that we to night
should worship at thy shrine; whence are
the hopes that we in thee should find the
words for utterance? A King thou art
swaying the sceptre over human hearts
and hopes. The grand panorama of
the Soul upon whose varied curtains
hang the secret workings of the inner
life. A splendid work whose title page
is Life, and whose astute Author, Child
of Nature, beckons the reader on to Sun-
shine and to showers. Here all peace and
happiness, sunshine calm serene is beaming
forth from out the deep blue eye, the lips
half parted bear a wreath of smiles, the
eyes ecstatic gaze on moon and stars
and firmament. A picture this for Artists
Sculptors, Poets, call we this sunshine? aye
the sun is setting, mark you the almost
imperceptible stealthy pace and how the

twilight sober thoughtfulness, usurps the throne of day. The lips have closed, and gone the wreath of smiles. The eyes which had shown in bouyancy of Soul have now a Sober, sadder cast, and while we in contemplation muse admiring its majestic mein, the eventide approaches.

You have heard the distant thunder, swelling o'er hill and woodland harbinger of storm, as anon you heard its echoes, you have hoped by some light token, that the hour would pass, even so with this sad picture, eventide brought with it murmers, clouds sat kingly on the forehead. The lips were slightly pressed and like the distant murmerings of the storm, the first upheavings of the Soul are plainly written.

Sunshine, calm and gentle sunshine, sat on human face serene,

then sober, somber twilight took the reign
then eventide, with lowering brow, and
threatening aspect seized & held undisputed
sway, and night black dreary night is now
enthroned,

Oh man! proud Monarch
of the World, in whom combined are hopes
and aspirations high, imagination peering
through the immensity of space, the ever rol-
ling tide of ages, with stubborn will, and
self complacent in the power given, before
the mighty majesty, kingdoms have fallen
and tottering thrones gone down. A Sov-
ereign hast, when given thee as pure as ever
Eden was, a few short years and demon-
cursed revenge gleam through the open portals,
night, dark and foreboding haunt the
fevered brow, where oft repose had sat).

And this is human
Countenance index of the Soul's deep feeling

more varied than the raintow's tints, or during dolphin's hues, such food for thought, rich lessons for inquiring minds.

That the countenance wields an important influence in the diagnosis of all diseases, adult and infantile cannot be denied, but when we consider the latter class - the many obstacles to overcome - the lack of that upon which we chiefly depend in the diagnosis of diseases of more advanced life. The power of conveying impressions by words we cannot but admit that its changes here are of incalculable value.

When we consider the small, tiny, infantile structure, with its peculiarities - its predisposition to disease, owing to the weak organization of the system. The skin extremely vascular, delicate and excitable, renders it liable to various forms

of cutaneous exhalation, the sensibility of the mucous membranes of the respiratory organs, and digestive tube. the first subject to laryngitis, pneumonia, pleurisy, bronchitis and croup. the second to colic, flatulence, purging &c. the liability to congestive inflammation, hydrocephalus, and convulsions by a derangement of the circulation through the brain by morbid changes in the abdominal and thoracic viscera. The extreme development of the lymphatic system, and the frequent enlargement and inflammation of the lymphatic glands, in a word the extreme vascularity of the skin, sensitiveness of mucous membranes, the rapid development of the intestinal canal, and cerebral hemispheres, rendering the infant peculiarly susceptible to nearly every ill that human flesh is heir to. with so direct characteristic phenomena, no language upon which to

predicate an opinion, unless it be the language of the physiognomy, make facial expressions of vital importance to the Practitioner.

It is the recorded experience of Tanner, West and others, based upon years of careful observation and laborious research, that in febrile excitement, the whole countenance is changed with the flushed and heated condition, there is occasional wrinkling of the features. In affections of the brain, and nervous system, the forehead, brows, and eyes are especially altered. The forehead being contracted. The brows knit, the eyes wild and vacant, fixed or staring. In morbid conditions of the organs of respiration, and circulation, the nostrils are rendered sharp and distended, while a dark circle surrounds the mouth and eyes. In diseases

of the abdominal viscera, the cheeks appear
hollow and sunken, the mouth retracted
or drawn, the lips colorless or brown, these
indications are lessened or increased as the
disease is acute or chronic; thus in acute
affections of the brain or meninges the
face is generally flushed, turgid and hot,
the color is intermittent, the redness fugative
followed by pallor instead of the wild and
vacant stare of the eyes, an upper eyelid
may be partly closed with inability of the
patient to raise it. In the early stages of
the disease, the pupil is contracted, but is
dilated as the disease advances, the upper
lip is firmly contracted over the gums, and
is of a livid hue, at times convulsions of
all of the features ensue, "In chronic irri-
tation of the bowels from worms, the nose
and upper lip are often turned, and the con-
junctivæ is said to look heart-like."

We will take a few specific diseases and trace if possible the characteristic effects upon the Physiognomy.

Measles (Cullen) Rubeola (Willan) Morbilli (Sydenham) are synonymous terms, to indicate a certain contagious fever, characterized by an accompanying eruption, which makes its appearance about the third or fourth day of the disease, better described as circular spots, resembling in appearance "flea bites" The premonitory symptoms are peculiarly well marked in the "facial expressions" The lachrymation, redness of the eyes and swelling of the eyelids - great heat of the skin, the rash first making its appearance on the forehead and face together with a feeling of languor - with cough, symptoms of fever, followed by report. The conjunctivae, Schneiderian mem

brane- membrane of the Lungs- Larynx Trachea, & Bronchi being effected are the diagnostic signs-

The Accoucheur may have frequent occasion to adopt means to restore Children who have been born in a State of Apnoea- although the treatment in such cases does not essentially differ, yet there are causes influencing this State of apparent death, which are of interest, and the rudiments for a diagnosis are not better marked than in the features-

In Apnoea from Lividness or loss of blood, the lips are flaccid, the skin cold, pale and sallow, with relaxation of the Child's limbs, In Apoplectic Apnoea, or congestion of the brain, from some obstruction to that organ- the countenance is bloated and

purple, the body hot, swollen and plethoric.

In young Children, there may be facial hemiplegia, from some compression or injury during parturition perhaps to the branches of the seventh pair of nerves.

In facial presentation the features of the new born Child, are often swollen, much disfigured, and distorted by convulsive movements.

In Cyanosis or a non closure of the ductus arteriosus, and foramen ovale, at the usual time for the closure of these openings. (which according to M. Billard is about 21 days) the integuments assume a blue, purple or leaden hue, well marked upon the lips cheeks and nails, with coldness of the surface and prominence of the nails.

In the disease known as Rachitis or Rickets, in which there is a preponderance of animal matter in the system over the earthy, thus rendering the bones friable, unable to support the body, and bending under the weight. The morbid changes in this disease are many, and generally slow in their development thus we may have sadness with irritability of temper, indigestion oedema of the abdomen gastro intestinal irritation, and diarrhoea, tumefaction of wrists knees and ankles, accompanied with slight pain general wasting and debility. If called upon at this point to render a diagnosis, doubt uncertainty and perplexity would face us upon every hand. Sadness and irritability of temper may occur in any of the eruptive fevers Oedema of the abdomen, may lead us to

suspect, some obstruction to the portal circulation— gastro intestinal irritation with diarrhoea, may be pathognomonic of Encephalitis, and until we have the curving of the long bones, the pale face the attenuated features, the unnaturally bright and lively expression of the eyes in addition to the other changes, our diagnosis must be clouded in uncertainty—

Amaurosis or blindness, from defective sensibility of the optic nerve, or inability of the nerve to convey impressions made upon the retina to the sensorium, may be characterized by the uncertain gait of the Subject, and the peculiar expression of countenance the eyes having a blank unmeaning look.

Internal Otitis, or in-

Inflammation of the lining membrane of the cavity of the tympanum is not an uncommon disease in adults or Infants, with violent head-ache, a sense of bursting or distention in the ears, accompanied with pain, we have an anxious expression of countenance, the eyes becoming injected. In adults there is generally, delirium, in Infants convulsions. Fits of screaming, with which Children frequently awake in the middle of the night, are often due to severe pain in the ear, and may be a symptom of otitis. Facial paralysis may occur from the inflammation having extended to the bony canal in which the portio dura passes round the tympanum

In the Cold stage of intermittent fever the countenance appears anxious. the features shrunken, and

pale, the eyes dull and hollow, with pulse small and the respiration hurried and oppressed; the period of this stage, varying from half an hour to four hours is superceded by the hot stage, or stage of fever. In this there may be delerium excessive thirst, frequent full pulse, feeling of fullness about the head. Still a third or sweating stage, characterized by an abatement of febrile symptoms, the flush, & dry and heated condition of the skin being superseded by a gentle moisture this followed by a perspiration, sometimes copious, which makes its appearance, first upon the forehead and face, and gradually extending over the whole body.

In diseases of the nervous system, the "facial expression" are peculiarly well marked. Those in acute disease of the brain we have already

mentioned - In convulsions an affection
in which Children - from the time of birth
to the end of the seventh or eight year are
very liable owing to the great excitability of
their systems - may arise from many causes
as an insufficient supply of blood to the
brain - a sufficient supply yet an impurity
of the blood - indigestion - pressure of a tooth,
upon an inflamed gum - intestinal worms
in fact any thing which over excites the
nervous system predisposes to convulsions
The premonitory symptoms are - a twitching
movement of the muscles of the face - the
lips drawn in all directions - the integuments
of the head and face become red and then livid
the eyes start the pupils are contracted or
dilated and insensible to light, the body be-
comes stiff and immovable - the convulsions
cease - a few moments either subside or are re-
peated - if the former the Child's face, as -

sumes its former natural appearance. Sometimes the muscles of the face are alone effected the contractions generally being greater on one side than on the other giving the countenance a most frightful appearance.

In passive cerebral congestion, which may occur during a paroxism of hooping cough, or in laryngismus stridulus hypertrophy of the spleen and liver in Children whose vital powers are too feeble to propel the blood the symptoms which manifest themselves are suffusion and general lividity of the face, and lips, anxiety of the countenance, pain in the head &c. &c.

That singular disease known as Chorea or St Vitus dance, in which the involuntary muscles are not subservient to the will generally commences

by a twitching movement of the muscles of the face which gradually extends to all of the voluntary muscles of the body, the features often being variously twisted and contorted.

The wild, and excited expression of the eye, the pleading anxious appearance of the countenance, which accompany the difficult respiration of Croup are familiar to all who have ever seen them. A disease which we might say belonged almost exclusively to Children between the ages of two and five years, and which is one of the most serious and fatal, to which their delicate frames are subject. With precursory symptoms often so slight as not to attract the attention of Parents the Child is suddenly awoke with feelings of suffocation with a peculiar dry ringing Croupy; agitation and alarm is depicted upon every lin-

-ement of the countenance - the eyes may be suffused and blood shot - a characteristic croaking noise is heard with each inspiration, the paroxysms of coughing are accompanied with dishnoea, with increased hoarseness of the voice there is increased fever, with great thirst; Exacerbations generally take place at night, with remissions in the morning, and so the disease progresses to the third Stage, or "Stage of collapse" or of threatened suffocation - the paroxysms growing shorter, the Cough more laborious almost suppressed, the voice feeble and inaudible, the crowing respiration becoming permanent - suffocation appearing at times imminent - If the muco purulent matter, or the membranous exudation obstructing the larynx and trachea, are not thrown off by expectoration, and relief thus given, a cold clammy sweat is noticed to

cover the skin respiration grows more difficult the pulse quickens but is feeble, the head is thrown back, the nostrils are rapidly dilated and contracted the countenance livid and the child turns its agonizing eyes, as if imploring relief from the pangs which it is suffering.

Many points of interest are to be observed in diagnosis the auscultatory sounds, what is revealed by percussion and palpation, the analysis and appearance of the faeces and urine, the temperature of the skin, and its peculiar variations of color. In children particularly those who are devoid of an articulate language, the cry and gesticulations, the breath the changes incident to disease in the upper lower and middle portions of the face, Each all of these affording invaluable aids in irritation and disease. "Facial expressions"

claim their concomitant place as diagnostic Signs - The smile and roseate hue of health indicative of peace of body and mind, joy and happiness may illumine every lineament, while desease distort and mar its beauty. Every passion of the Soul, portrays itself in unmistakable characters - "Index of the Soul's deep feeling" should we as Practitioners disregard its revelations? We meet desease a powerful Enemy and we go forth to combat, with weapon which centuries of toil of unmitigated labor have placed within our reach - The Subject may complain of pain, excruciating pain, (with the fact that many Patients makes exaggerated or unreliable statements) should we upon the bare statement of excruciating pain adopt a strong antispasmodic or antiphlogistic treatment? or does the countenance afford us a faithful mirror to the extent of pain?

As the Physician enters the Sick room he intuitively scans the countenance of the Victim of disease as if to read the morbid changes there, if not plainly written he makes the apparent expressions subservient to the ends to be attained he makes them aids in diagnosis."

Little Children miniature representatives of the noblest of God's creations, Man, present us with subjects in point of interest and importance, none others claim a parallel and rendered of deeper interest from the fact that a veil of uncertainty hangs between us and their future histories – The Smile of joy the frolicsome gambols – the beaming eye of intelligence touches the Maternal heart strings – imagination is made vivid, which peering through the vista of approaching years, sees a mighty intellect, swaying the hearts of the

multitude, or imbued with a love of freedom — charging brave hearts and firm hands in the heat and smoke of battle. Reverse the picture, let sickness seize her Boy, with the blanched and attenuated features, the Mothers hopes hang in the scale of uncertainty — He whose life she had compared to an imortal Harvey & Simms contributing to Science A Howard moving like a spirit among suffering humanity, alleviating their misfortunes eliciting the admiration of the World in that one word "Philanthrophist," A Shakespere, Southey or Byron Master-Spirits of Literature — Now stricken down in disease, the roguish smile gone, the bright eye dimmed, & life perhaps ebbing away, think of the combating waves in the Mothers breast between hope and despair as the Phsician makes the proper examinations

for a diagnosis if enabled to make a prognosis, and that prognosis should be favorable, who can tell of sunshine in the soul of that dejected Mother? If by judicious treatment the Child is restored to health — Who can measure the depth of Maternal gratitude? or describe in fitting language the height of that Physicians joy? A correct diagnosis being indispensable to a judicious treatment of disease, and "facial Expressions" revealing much, which would otherwise be hidden and obscure, the importance of giving them careful attention is obvious.

When we leave the familiar halls and the familiar faces of the old University of Maryland, to participate in the heat and smoke of the battle of life, may the truths inculcated by her honored Faculty, live fresh in our memories, that we may wield them successfully

in the highest of all purposes the amelior-
ation of human suffering. Proud of our
Alma Mater, may we see her in the future
as she has been in the past, The Sturdy Oak
peering through the tempest, sending its
out-spreading branches, far up in the
clear Sunlight of Heaven.

Respectfully

George H. [illegible]

AN

Inaugural Dissertation

ON

Typhoid Fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

J. D. Ridout

Of

Maryland

Session of 1868—9

Typhoid Fever.

Typhoid fever is an acute affection presenting certain peculiar symptoms.

It is one of the most destructive diseases to which the human family is subject.

It prevails endemically in almost every part of the world.

It has been described by different authors under various names. I have adopted the term typhoid fever because it is the name applied

to it almost universally at the present time; Moreover it has another important though negative recommendation in that it involves no pathological error.

Clinical History.— The symptoms of this disease are usually very obscure in the first stage.

The invasion is generally slow and insidious; though occasionally it is very abrupt in its development.

The following are some of the most important premonitory symptoms. The patient suffers from languor, both physical and mental,

He complains of headache, pains in the back, loins, and extremities, irregular chills or chilly sensations loss of appetite, nausia, vomiting, epistaxis, diarrhoea &c. He gradually grows more and more debilitated unfit finally he is compelled to take to his bed. The disease now becomes fully developped.

During the first few days he is very restless and apprehensive of evil. His sleep becomes disturbed. About this time delerium is usually manifested.

It is generally of a mild pas-

sive kind, depending upon the altered condition of the blood.

Sometimes the delirium is very violent. This prognosticates a severe type of the disease. The countenance assumes a dull listless expression. The patient takes but little note of what is going on about him. If he is aroused and his attention attracted, for some time, he will generally recognize his friends; but his mind is too feeble for him to carry on a connected train of ideas, or to answer questions very pertinently.

The skin is hot and dry.

Sometimes it is bathed with perspiration. Occasionally it displays some irregularity in regard to its temperature, one part may be hot and dry while the rest is damp and cool.

During the second week a peculiar eruption generally makes its appearance, known as the rose colored lenticular rash.. This eruption is pathognomonic of typhoid fever.

It is usually found upon the chest and abdomen. Sometimes it makes its appearance on the back only.

The tongue in the early stages is covered with a white fur which gradually changes to a dark or even black color. It sometimes presents a red and shining appearance, especially the tip and edges. This appearance of the tongue indicates progressing ulceration of the gastro intestinal canal.

In the later stages the lips and teeth are covered with a black substance called sordes.

The abdomen becomes tympanitic. A peculiar gurgling sound can be elicited from

the right iliac fossa by pressure.

Hemorrhage from the bowels occasionally occurs.

Thirst is a prominent symptom in many cases.

The respiration is usually accelerated.

The pulse is augmented in frequency in the vast majority of cases.

The urine is small in quantity. It has a high specific gravity and deep color. It is sometimes retained from indifference on the part of the patient.

The condition of the bladder

should be ascertained by careful examination at regular intervals and the catheter used when requisite.

There is a peculiar putrescent odor, that emanates from the persons of many patients, characteristic of typhoid fever. Some physicians assert that they can render a diagnosis from this symptom alone.

Complications.— The diseases that are liable to complicate typhoid fever are very numerous and they greatly augment its mortality.

Pneumonia is one of its

most frequent complications.

It is generally of a low asthenic type and adds greatly to its dangers. The supervention of this disease is often indicated by a circumscribed red spot on one or both cheeks.

Bronchitis erysipelas, inflammation of the brain and dysentery may occur as complications.

Malarial fever often coexists with it. The blending of these two diseases constitute that affection known as typho-malarial fever, which has attracted a great deal of attention lately.

There is one important complication to be treated of yet. The one more to be dreaded than all the rest combined.

I refer to that form of peritonitis resulting from the perforation of the walls of the intestinal canal. This accident is almost invariably followed by a fatal termination. The symptoms of this complication are sudden and violent pain diffused over the abdomen, tympanitis, a hurried pulse and great prostration. This complication may occur in mild as well as severe cases.

It generally occurs late in the disease and sometimes even after convalescence has progressed for a considerable period.

Typhoid fever generally runs its course in three or four weeks. Death may result either from its complications or from exhaustion.

If the disease tends toward a fatal termination all of its symptoms become aggravated.

The patient sometimes seems to be nervous; he will pick at and pull about the bedclothes.

Subsultus tendinum or

spasmodic twitching of the tendons occurs about this time.

As the disease advances the patient grows very dull and listless; he takes little or no notice whatever of anything that is transpiring about him. Flies may crall over his face without disturbing him.

Finally coma supervenes and is speedily followed by death.

If however the disease should tend toward a favorable termination all the symptoms begin to ameliorate. The febrile phenomena subsides. The fever is followed by a profuse perspiration.

The patient begins to take an interest in himself and in things transpiring about him. His appetite returns. His urine is increased in quantity. It has a lighter color and a lower specific gravity.

Patients have enormous appetites after convalescence is declaried.

After a severe attack the hair falls off and is followed by a new growth. Deafness is sometimes a sequelae of this disease.

Anatomical Characters. —

Typhoid fever is characteriged by very important anatomical characters. There is

scarcely an organ in the body that may not suffer more or less during an attack of this disease.

The spleen is frequently enlarged and softened. The liver is occasionally softened and altered in color. The walls of the heart are found in some instances very flaccid, and their muscular structure softened. The blood is dark in color and non coagulable.

The mucous membrane of the air passages is frequently congested.

The Stomach sometimes presents evidences of inflammatory action. The kidneys are often

found to be engorged with blood.

The above named lesions though important are not pathognomonic. They may or may not be found after an attack of this disease. The following however are different. They occur almost invariably in this disease, and are found in no other. They are therefore of paramount importance.

They consist in the enlargment and ulceration of Peyers patches and the glandulae solitariae.

The mesentery glands also are generally enlarged, but they seldom ulcerate. The morbid ap-

pearance of these glands is due to the accumulation within their structure of a peculiar substance known as the typhoid deposit. In regard to the origin of this deposit there is not unanimity of opinion.

It is believed, by some, to be composed of disorganized blood globules.

The glands nearest the cæcum are the first that become affected.

The ulceration extends from that point upward. The ulcers are followed by small cicatrices.

The walls of the intestines may be perforated by one or more of these ulcers.

Pathological Character.— The pathology of typhoid fever is shrouded in great obscurity. Many theories have been advanced in regard to its nature, but the most that can be said for any of them is they are hypothetical.

The most plausible theory yet advanced, is that which gives it a place among the diseases of the blood.

It is now generally believed that the first and fundamental aberrations from health take place in that fluid.

It is called a zymotic disease

because it is believed that this poison producing it acts upon the blood like a ferment.

Causation.— Typhoid fever is the result of the imbibition into the system of a peculiar poison.

Among the agencies modifying the propagation of this disease may be included, age, season of the year, hygenic conditions, and contagion.

It very rarely occurs in persons who have passed their fiftieth year. It is seldom found in infants.

It is more prevalent in

the Autumn than any other season of the year.

Over crowding, impure air, exposure to wet and cold, unwholesome food, accumulation of large quantities of putrefying animal and vegetable debris, greatly facilitate its propagation.

In regard to the contagious character of this disease there is great contrariety of belief among pathologists. Many believe it non contagious and adduce strong arguments to maintain that point, but I think it has been conclusively proved that

it can be, and has been under certain circumstances communicated from one individual to another.

Several cases have fallen under my observation where it seemed to have been propagated by contagion alone.

A young lady contracted this disease while absent from her home. Feeling very unwell she returned to her home and was nursed by her friends. Shortly after her death four members of her family were taken sick with the same disease, in three of whom it terminated fatally.

There had been no other cases of Typhoid in that community for several years previous to her case, and there occured at that time, no other case in those who were brought in contact with her.

I was taken sick in the Autumn of 1863, while attending my first course of Medical lectures. Not knowing the nature of my malady I went home. My disease proved to be Typhoid Fever. I was placed in an apartment that was kept thoroughly ventilated. Notwithstand-

ing several of my friends contracted the disease. Fortunately it terminated favorably in every instance.

This is a disease that rarely occurs in the same individual more than once.

Diagnosis.— Typhoid Fever is liable to be confounded with several other diseases, especially two of the idiopathic fevers; Typhus and Remittent.

The following are some of its most important diagnostic points: its insidious and gradual development, diarrhoea tympanites, borborygmus, iliac

tenderness, and the rose colored lenticular rash.

Prognosis— The prognosis should always be guarded.

Typhoid Fever is never a trivial disease. Its mildest forms are at all times liable to serious and even fatal complications.

Treatment—

Typhoid Fever is a selflimited disease.

It tends intrinsically to recovery.

A patient suffering from an attack of this disease has been aptly compared to a shipwrecked mariner drifting toward

the shore. All that is requisite is that his strength last for a certain period of time and he will be safe.

No specific remedy for this disease has yet been discovered.

Many systems of treatment have been adopted to abort it in the early stages but none of them have proved successful in a very large number of cases.

The treatment should be expectant, that is the symptoms should be treated as they arise.

In the early stages emetics are useful in many instances Dr. Chambers advocates their employment very strenuously.

He thinks that the disease may sometimes be abridged or cut short by their use.

After it is fully developed they can do no good; but may act injuriously by depressing the strength of the patient.

If the skin is very hot and dry, sponging the body with tepid water, or water slightly acidulated with vinegar, acts very happily.

A neutral mixture may be given under these circumstances.

Ice and cooling drinks should be administered to allay thirst.

If the patient is very restless opiates should be used especially at night.

If the tongue is red, dry and shining, or the abdomen is tympanitic, the employment of turpentine is called for.

If the diarrhoea is very mild no remedial agents are necessary, but if severe it should be controlled by astringents.

The hygienic condition

of the patient demands especial attention.

He should have a plenty of fresh air. It is always best, if possible, that his room should be warmed by an open fire place.

He should be fed at regular intervals. His food should be very concentrated, and it should be administered in a liquid form.

Milk, beef tea and animal broths are the most appropriate.

They should be administered in as large quantities as the patient can digest.

Alcoholic stimulants have

have entered largely into the treatment of this disease during the last fifteen or twenty years.

These remedies are potent both for good and evil.

If used indiscriminately they may act injuriously; but if used with due discretion they will prove to be the most valuable remedial agents at our command.

The following symptoms indicate the necessity for their employment: A tendency to prostration with a feeble and rapid pulse, and low muttering delirium.

It is not prudent to post-
pone the employment of Alcohol
too long; but as soon as there are
any indications that the vital
powers of the patient are begin-
ning to fail it should be resorted to.

The size and frequency of
the doses depend upon the ur-
gency of each case.

Stimulants should be em-
ployed for some time after
convalescence is declared.

The mineral acids
have been used to a consider-
able extent and have been found
very useful in the treatment of this disease.

The Sulphites also have been employed in its treatment. Sometimes with apparent benefit.

Should perforation of the intestinal canal occur, opium should be employed freely.

Other complications should be treated as they would be, if they occurred independently of this disease, save the employment of depressing agents.

An Inaugural Dissertation on

Digestion.

Submitted for examination of the
Provost, Regents & Faculty of Physic
of the University of Maryland,
for the degree of
Doctor of Medicine.

By

Carter Hastings,
of Virginia.

Session. 1868-1869.

Comparatively uninitiated as I am in the Medical World, I must ask a lenient criticism, on this my first mite contributed to its literary coffer, from those who by longer experience & study, has dispelled the cloud which evelops the young Student, & now are able to view with undimmed vision its intricacies.

The subject chosen as a basis for my "Thesis," is in importance & interest second to none in the Medical Nomenclature.

What power in all nature more forcibly shows the wise providence

of the "Great Mechanic", than that of "Digestion"— the most essential process to the animal economy— the key, as it were, to the existence of his Creatures.

We define Digestion, as that process by which food taken by an Animal, is prepared for absorption & the nourishment of its tissues. It is peculiar to Animals. Vegetables feed on substances which are supplied to them in such form as to be readily absorbed without undergoing any change; hence this process is not essential for their nutrition. Animals, on the other hand, subsist principly, if

not entirely on organic substances,
which when taken are solid or semi-
solid in consistence, & insoluble; hence
we see why this process of digestion
is peculiar to them alone.
We may say that Digestion has
for its object, the liquifaction of food,
that it may be absorbed. & the
alteration of its Chemical composition,
(when necessary) for the changes it
subsequently undergoes in the
nutritive process.
The simplest conditions for the ful-
fillment of the above indications,
would be a fluid capable of exerting
such an influence, & a cavity or vessel

in which the action might take place.
And it is even thus we find the
provision of the Creator, for the performance
of the process in his creatures. Not
absolutely of a cavity merely with
one fluid, does the digestive
apparatus of all animals consist;
yet we do find exactly such a
condition of things in some of the
lowest order; tho' in the vast
majority of animals, it is of a
more complex arrangement.
Nor is it accomplished, alike, in its
minute details in all animals, but
its general characters are the same.
It consists, essentially, of the food

traversing a tube, running mouth to anus, coming in contact during its passage with certain fluids which exert their influence on its constituents. As food is composed of articles, differing from each other, both chemically & physically, the fluids must of necessity differ accordingly from each other; and it is thus we find them, each one exerting its influence, on some particular ingredient. Moreover, as the several species of animals differ in their habits + constitution, their food must also vary; consequently we find corresponding alterations in their digestive apparatuses.

For example, Herbivora which feed on vegetables, in which the nutritious material in very small proportion, & in a very unmanageable form, being enclosed in cells of a very indigestable character, & entangled among woody fibres, must necessarily have a different as well as a more complicated apparatus, than that of the Carnivora whose food, as a rule, has simply to undergo liquifaction.

It is not however, my purpose to follow the process as it is performed in the various Species, but to limit myself to its discussion as it is accomplished in the human subject.

The "Alimentary Canal" in the human subject, consists of a musculo-membranous tube running from mouth to anus. It varies in shape & size at different points along its course, which compartments are severally named, from above downwards, as follows.
Mouth - Pharynx - Oesophagus - Stomach - Small Intestine, & Large Intestine.
In traversing this canal, the food comes in contact with no less than five different fluids, the secretions of the several compartments, tho' not exclusively, for some neighboring glands are concerned in their manufacture.
We will now proceed to follow the

food in its decent, & note the changes
wrought upon it by the several fluids.
In the Mouth, the first of the compart-
ments, are contained, the organs of
Mastication & prehension, {the Teeth}, &
the organ of taste, {the Tongue}. It is
also the receptacle for the first of the
fluids viz Saliva. Here is performed
the first step in the process, viz.
Mastication & impregnation of the food
with Saliva.
Mastication consists of the cutting
& trituration of the food with the Teeth;
By which action it is reduced to a
finely divided state. This step is
evidently of vast importance, since it

places the food in a condition, to be most advantageously acted upon by the fluids. This preparation of the food is exactly like that given by the Chemist to any substance, which he wishes acted on with most readiness, before presenting it to his digestive menstruum. Thus finely divided, a greater surface is at once presented to the fluids, & its solvent power power is much more readily exerted on small particles, that if a homogeneous mass was presented. During mastication come into play the "Saliva". This fluid is not from a single source, nor is it a simple secretion, but, as found in the Buccal cavity, it

consists of a mixture of distinct secretions,
four in number, differing from each
other both physically & chemically.
These secretions are from neighboring
glands, viz. Parotid, Submaxillary, &
Sublingual glands, & mucous from
the follicles of the Buccal mucous
membrane. The Saliva has a
double function, one purely physical,
the other Chemical in its character. Its
physical function is that of lubricating
& softening the food, thus aiding
mastication, & rendering deglutition
easy. It has been demonstrated, by
experiments on lower animals, that hard
dry food is with difficulty masticated, &

that even if the food within itself be
tolerably moist, without the Saliva,
deglutition becomes difficult & laborious.
The second function of this fluid, to
which allusion has been made, is
that of transforming Starchy substances
into Sugar. This is asserted, by
Dalton, to be rather accidental, than
essential, using as his argument that
this function of the Saliva ceases,
when the food reaches the Stomach, &
that the cause of its cessation, is the
presence of the Gastric Juice. Now
experiments of other Physiologists, go
to prove the contrary. As an example,
Barron Leguard, & D. Smith, experimented

as to this fact, as follows. Leguard, who possessed the faculty of vomiting at will, first washed out his stomach thoroughly with warm water, then took a hearty meal of arrow-root starch. Vomiting at intervals, & examining each ejection seperately, they found each quantity contained sugar, also that, that remaining the longest contained the largest quantity, & finally no trace of starch could be detected in the vomited matter, it being nothing but sugar. Now if the result of the above experiment be correct, {& I see not why, as much confidence be placed in these Gentlemen as in Dalton}

it would seem that this function of the Saliva, is not accidental. And it is not unlikely that nature should thus make a double provision for starch digestion, since it exists in such an unmanageable form. We do not, however, intend to assert that the presence of the Saliva is actually necessary for the perfection of the process; for as we have already seen, mastication + deglutition may be performed without it, + we shall presently see that starch may also be digested without it. Tho' not essential, it is a powerful auxilliary to its healthy accomplishments.

Mastication having been sufficiently performed, the triturated Bolus, lubricated by the saliva, commences its passage through the Pharynx + Oesophagus to the Stomach; this portion of the process is termed "Deglutition". This step is partly voluntary, + partly reflex. The first stage of this step, is the conveyance of the food into the fauces, which is done by the approximation of the tongue + soft palate, + is voluntary. When food passes fauces into Pharynx, it excites reflex action, by virtue of which the muscles of the Pharynx so contract as to force the Bolus into the Oesophagus; its propulsion along

this tube, is accomplished in the upper portion, by the contraction of the Pharyngeal Constrictors, in its lower portion, by its own muscular coat.

Food is prevented from reëntering the mouth, when Pharynx closes on it, by action of Palato-Glossus muscle, which draws the anterior half arches towards each other, + also draws Uvula down against the tongue - prevented from entering posterior nares, by the muscles of the posterior palatine arches contracting in such a manner, as to cause the arches to approach each other like sliding curtains, a cleft is left between the

approximated curtains, over which the Uvula pits like a valve - from entering the Larynx, by its (Larynx) being drawn up against the tongue, the Epiglottis being thus pressed over the entrance completely obliterates it. The Bolus thus forced downwards, enters the Stomach - the next compartment in order - through its Cardiac Orifice. This orifice is guarded, by fibres of the muscular coat of the Stomach, which are so arranged, as to form a kind of Sphincter.

When the Bolus enters the Stomach, it consists of undigested substances principally, with some partially digested

starch, the Bolus being in state of minute division from trituration, + saturated with Saliva.

In the Stomach the food comes in contact with the second of the digestive fluids, the "Gastric Juice". This fluid consists solely of the secretion of the glands of the, situated in the structure of the organ. It is a clear colorless fluid, of an acid reaction. Its digestive power does not reside in the acid, as was once thought, but its virtue is due to its organic ingredient, "Pepsine", tho' the presence of the acid is essential for the exertion of its power. This fluid is not secreted

during the intervals of fasting, but its secretion commences immediately on the introduction of food. Moreover, it has been found, that the introduction of irritating indigestable substances, causes its secretion to cease, & in its stead a thick copy mucous is thrown out, as a protection to the delicate mucous structure, & that its flow is only excited by food its natural stimulus.

The constituents of the "Bolus" acted on by the Gastric juice, are the Albuminoid principles. Its action is not simply to cause a chemical solution, but it causes a true

Catalytic transformation, by which they are converted into "albuminose". This newly formed substance is allied to albumen, tho' unlike it, is not affected by heat + nitric acid, + is freely soluble in water, it remains fluid when once digested, + is ready for absorption. Some mechanical phenomena are presented by the organ itself, which greatly facilitate the action of its fluids. The organ commences certain movements, when the food enters, + continues them until the food leaves it. These movements are due to the alternate contraction + relaxation of the muscular fibres of

its structure. Which as it takes place that the food is carried, first along the greater curvature of the organ to the pyloric extremity, then back along the lesser curvature to the cardiac extremity, & so on. We may readily understand how this aids the action of the fluids. Since by this "Churning", as it were, of the Bolus, its entire surface is presented to the fluid, also it is divided into smaller particles thus rendering it in a more favorable form for the action of the fluid.
The food now passes into the small intestines, through the Pyloric orifice of the Stomach. As it enters this

portion of the Canal, the Bolus consists of Albuminous, partially digested starch, fat oil globules, & also some undigested & partially digested Albuminoid compounds, for the Gastric juice does not digest all the albumen while food remains in the Stomach, but its action goes on after reaching the Intestine. This pulpified & partially digested mass, is the Chyme of the older Physiologist. While traversing the "Duodenum", the first twelve inches of the Small intestine, the food meets the three remaining digestive fluids viz - Intestinal juice proper, the Bile & the Pancreatic juice. The principles acted upon by the Intestinal

juice, are the Starchy element, which it converts into Glucose or Animal sugar. The Pancreatic juice digests the Fatty principles. The fats are not altered chemically, but are simply emulsionized, & are thus absorbed. Tho' the principle action of these two fluids are on the Starch & fats, yet it has been proved, that all the alimentary principles may be digested in the Intestines.

As regards the exact function of the Bile it is not known, Yet it has been conclusively proved, that it's passage through the Intestinal tract, is essential for the health of the animal.

It is asserted that the Bile exerts some influence on the Fatty acids, thus promoting the absorption of the fat. It has been proved, however, that even if the Bile be allowed to leave the system by an artificial opening, & not allowed to pass through the Intestines, the following phenomina are presented. Viz. Constant & progressive emaciation, falling off of the hair, a putrescent odor of the breath & feces, excessive flatulency, & although the appetite remains intact, & we indigest a food passes with feces, yet the animal dies by a gradual failure of the Vital powers. Hence, tho' not properly

speaking, a digestive fluid, yet it is essential for the healthy performance of the digestive process.

Although the action of the several fluids commence in the seperate apartments, their action go on simultaneously in the Intestine; hence digestion in this portion of the canal, may be deemed the most important & complicated, of the whole process.

The passage of the food through the Intestines is accomplished by a peristaltic action which is set up in them by the food itself. Its passage is very slow, being about one inch

per minute. this is as directed by nature, for it is principally while in the Intestines, that the nutritive portions of the ingesta are absorbed; moreover in her wise providence, nature provides for its absorption in another way, that is by throwing the surface of the tract into folds, the Valvulae conniventes, thus presenting a large absorbing surface over which the food has to pass.

When the food reaches the Ileo-coecal Valve, the termination of the small into the large intestine, & passes into the Colon, its character is changed, consisting now principally

of effete matter, the indigestible portion of the ingesta, which consists chiefly of debris of muscles, & vegetable fibres, & a small amount of Bile coloring matter. But little absorption takes place in this portion of the canal. As the Bolus traverses the colon, it is changed in appearance, consistence, color & odor, being much firmer, of a dark color & disagreable odor, it accumulates in the Rectum, the terminal end of the canal, a pouch like dilatation, until sufficient quantity is present, when it is then expelled through the anal orifice, under the name of feces.

AN

Inaugural Dissertation

ON

Scrofula

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

H. G. Garner

Of

St Mary's Co. Maryland

Session of 1868 & 69

The title Scrofula as is well known is given to a general and constitu-
-tional affection usually proclaimed by glandular or articular enlargements which are frequently followed by ulcers and fistulous sores, occasionally however this disease appears on the Sur-
-face of the body, when it is characteri-
-zed by lesions peculiar to itself. Tuber-
-cles of a lived red, which remain very long indolent and Stationary, Make their appearance on different regions of the Skin. these end attength by becom-
-ing Softened and perforated, when they discharge a Serous or puriform fluid, which exposed to the air dries up under the form of crusts or Scabs. The Tubercular formations characteristic of

Cutaneous Scrofula are the Lesions which is my object to Treat of in this dissertation. not only because the Skin is the element in which they appear and because they have peculiar and distinguishing characters but it is often of the highest importance to distinguish these from other Tubercular diseases. Cutaneous Scrofulous Tubercles are most frequently seen on the face, neck and upper extremities. They often appear in the Vicinity of the Scrofulous Ulcers Consecutive to glandular or indolent Subcutaneous abscesses. They have also been observed to succeed the bites of leeches in persons of scrofulous habit. They are seldom numerous. and more frequently

isolated them in clusters. The isolated tubercles commence as small spots or stains of a livid red color and unaccompanied with heat, pain or itching, the finger applied to these spots detects something hard, like a grain of barley or small shot imbedded in the substance of the skin, one or two months after its first appearance, the small spot, which has become gradually more and more prominent acquires the tubercular character very decidedly, these are usually no larger than a pea, in some cases they equal a small olive. If they increase in size at a subsequent period, it is only when they begin to soften this softening which is one of their principal characters is accomplished with extreme slowness

It usually begins in several points
when the tubercles are of any size, and
each of these softened points occasionally
bursts externally and very generally
at different times. Their form is then
irregular and uneven on the surface, full
of depressions and elevations, often
present a small and recent perforation
covered with a scab, under other cir-
cumstances whether in consequence of the
softening, after having begun in the
centres of the tubercles extending from
thence to their outer masses, whether
after having begun in several places,
soon ending in the formation of no more
than a single abscess. The whole of their
superficies becomes soft and fluctuating
to the touch. Arrived at this stage of decay
" other tubercles may still remain stationary,

for a very long time. The skin red
and livid, is neither naturally softened
nor perforated, and if the tubercle is
now punctured a few drops of serous
fluid will escape. The opening continues
for a very long time fistulous and when
it does cicatrize a small hard irregular
nucleus or kernel almost always remains
in the part. Cutaneous scrofulous tubercles
may occur in clusters of larger or smaller
extent, nodes. This form they occasionally
appear on the outer aspect of the arm,
forearm, back of the hand and fingers
coinciding for the most part with
other evident Strumous affections of the
bones and Conglobate glands. The forms
and dimensions of these clusters are
rather variable; they generally are not less than
an inch, nor more than from two to

three inches in diameter. The Tubercles thus agglomerated stand out in relief from the skin; they form mammillated clusters, the violet colored surface of which is pretty firm in some points where the Tubercles are not dissolved, soft & fluctuating in others where this has taken place moist in those parts where the contents of the Tubercles have made their way to the surface, & covered with lamellar scabs in those where the discharge has become hard and dry. When the Constitution has suffered profoundly under the influence of scanty and unwholesome fare, & of the privations of every kind that attend upon extreme poverty, the Tuberculous patches sometimes put on a very peculiar appearance; their surface to a very considerable extent, becomes soft, fungous, of a grayish whit

or ruddy Violet color, without any morbid increase of temperature, and almost without pain, at the same time it is habitually defiled by a yellowish and sometimes Sanguinolent Serous exudation. This Variety of cutaneous Scrofula is still slower in its progress and more rebellious to all remedial treatment than the preceding. Subcutaneous Scrofulous Tubercles are small circumscribed tumours situated in the cellular substance, under common integument and developed not only in the vicinity of glandular enlargements but in districts that are free from all other diseases and particularly on the upper extremities. These Tubercles are flatter and less movable than enlarged lymphatic

glands and are distinguished at the outset by a small circumscribed lenticular hardness situated under the Skin which is movable over them and unaltered in its color. They usually continue for a long time stationary in this Stage and by very slow degrees they increase in Size and although attain the volume of a walnut or small egg. It is only at a considerable advanced period of their growth that the Skin which had hitherto preserved its natural Mobility becomes adherent to the Centre of these Subcutaneous Scrofulous Tubercles. It is also in this point at a still later period the Skin acquires the peculiar livid red Color characteristic (among other things) of the affection which subsequently spreads to the base of

The Tumours. The Tumours firm at first under the finger become soft although and if opened at this Stage a Small quantity of greenish coloured Serous fluid thickened with whitish flocculi or curdy looking matter is evacuated. If left to themselves the Skin over their centre gets thinner and thinner and an opening which is always of greater Size than in Cutaneous Scrofulous tubercles is finally established. The Skin is then almost always loosened to the base of the Tumours, and is allast destroyed to such an extent that it is no longer a fistulous opening which is presented to us but an open ulcerated Surface When these tubercles burst Spontaneously their fistulous openings yield nothing but a little Serum and

a few curdy fragments, a quantity
of which always remain in the tumor
& may be expelled by a sufficient
degree of pressure exerted on it
last. When these tubercles exist
near the edges of scrofulous sores
they are united & soften less readily
than under other circumstances, and
their contents are occasionally evacuated
under the general edges of the ulcers.
Scrofulous ulcers are consecutive to
cutaneous & subcutaneous tubercles
to excoriated Chilblains & indolent
abscesses &c occurring in strumous
constitutions. They are more frequent
on the neck, trunk or the extremities.
They are in general of small extent;
yet they are occasionally observed
to multiply astonishingly in size

particular region of the body, and to destroy for instance the skin of the neck and a considerable portion of that of the chest and shoulders. The isolated cutaneous tubercle seldom proves the primary cause of true ulceration: it frequently shrinks, & cicatrizes after becoming softened. This kind of a large size however does occasionally end in an ulcer, the dark red or livid, hard and indolent edges of which penetrate, deeply into the skin. The edges of the ulcers consequent on cutaneous scrofulous tubercles collected into clusters, are of a brightish red, considerably swollen, not very painful, and apt to bleed on the slightest touch. Those of the ulcers that follow subcutaneous scrofulous

affections present some peculiarities they frequently form loose flaps detached from the subjacent tissues, dingy & very commonly of a livid red color, which indicates very accurately on the exterior the distance to which the loosening extends internally. The bottoms of scrofulous ulcers of the skin, consequent on agglomerate and confluent tubercles, are often pale and without granulations, but puffed and flabby. The discharge from these ulcers is sanious rather than purulent, and in drying, forms greenish & brownish incrustations, which are by & by detached from the surfaces to which they are adhered by a fresh secretion of the sanious fluid. In other cases the bottoms remain constantly lubricated with this peculiar secretion, and are very uneven

and of a yellowish gray in different places. The lymphatic glands in the vicinity of such ulcers are frequently enlarged in the most especially. The progress of scrofulous ulcers is extremely slow. They frequently continue for years without any material alteration in point of extent or character the ravages they commit and deformities they occasion in some cases although very extensive are the work of so tardy a process that their progress is amount is not perceived; it is only discovered in the end. Whether the cure of a scrofulous ulcer is accomplished spontaneously or under the administration of art it always takes place with extreme slowness. The surface of the sore looks less pale. its edges not so

had not so livid, and are less dis-
posed to bleed; it is then covered with
granulations of a clearer rose color
and the discharge becomes whiter and
more consistent. The cicatrice that
results long continues red, shining
easily become puffed and uneven. To
this red color of the scar a bluish
tint succeeds by slow degrees: its
surface sinks, and its margins still
puffed, often present irregular bumps
in their course, a species of consecutive
tubercles which are very long of
disappearing. The skin frequently ex-
hibits irregular bands which bear
a great resemblance to the cicatrices
of burns, and have numbers
of whitish rounded & soft inequalities, pro-
duced by an excess of integument, & a lax state

to commence in a swelling which attacks the Skin in the neighborhood of the Nail, especially towards the root. The swelling increases slowly and forms a puffy rim of a livid red color, which ulcerates & grows fungous at a subsequent period. The bone of the last Phalange frequently enlarges; the white finger swells, & its extremity acquires the shape of a little Club. The Nail then becomes Misshapen, looks black, grows soft, & is partially detached. In this state the extreme round of the pulp of the finger enlarges and forms a kind of fungous ring, in the centre of which the diseased & partially loosened Nail is perceived. The Nail is at length thrown off, & an irregular reddish,

Naked Surface is left, from which Misshapen horny productions are thrown out, these often take a faulty direction, and by their irritation tend to keep up inflammation in the Surrounding parts. Individuals affected with scrofulous Tubercle or ulcers forth, almost invariably exhibit other Morbid phenomena characteristic of the Strumous Constitution. The most common of these are the enlargements of the lymphatic glands, Chronic inflammation of the edges of the eyelids, Chilblains, Sores, Indolent Abscesses, Caries &c. Attention to these different Symptoms are frequently of Service in doubtful cases, inasmuch as they lead us to the true nature of certain Cutaneous & Subcutaneous Tubercles & of the ulcers which succeed them.

Individuals who are the subjects of scrofulous affection are usually of fair complexion, with light or clear brown hair. Large blue eyes, the pupils dilated, and the sclerotic coat of a bluish tinge; the point, & especially the alae of the nose, & the upper lip are often thick & swollen; the mucous sec-cretion habitually in excess, the lips chap & become painful in winter; the teeth are disposed to get incrusted with tartar, the jaws are large. The chest is narrow, the thorax generally contracted, the belly large, & the articulations bulky. One or several of these characters are very commonly observable; it is seldom that they all occur together. It is also to be observed that individuals with black hair & dark eyes, & who do

not appear at all deficient in Vigour
of constitution, are occasionally the
victims of Scrofula which appears then
to be developed under the influence of
the law of hereditary descent or in
consequence of insalubrious regimen. The
diseases with which the tubercle ulcers
of Scrofula may be most readily confounded
are the tubercle ulcers of Lupus, Syph-
ilis, & Cancer, but independently of
the fact that cutaneous Scrofula is
almost always accompanied by other
alterations proper to the general
affection, and by unequivocal indica-
tions of the Strumous constitution,
the tardy progress of Scrofulous tubercles
which become inflamed internally and
then cause perforations of the Skin.
The pale and fungous appearance of the

Ulcers, & their violet & frequently loosened edges, admit of no mistake in the diagnosis (& prognosis) The development of a scrofulous tubercle or ulcer, however trifling it may at first, is always a serious affair; for it is one of the manifestations of a constitutional disease, the cure of which is always effected with difficulty, which the progress of years may modify, but will rarely destroy completely, & which is frequently transmitted hereditarily, even when the principal characters of the affection have disappeared. Treat

The first & main object must be to accomplish some modification of the constitution by means of appropriate regimen, habits, & exercises. Practitioners

are generally agreed in recommending
a warm climate and dry atmosphere
living in a healthy situation, exercise
in the open air when the season and
weather permits. The use of the temperate
or cold bath. dry frictions of the skin
&c The diet requires particular attention.
Good animal ~~food~~ beef or Mutton, roast"
" ted or broiled: fresh eggs. fish. good beer
or wine. mixed with some slightly Calcareous"
" heate water. appear to compose the
aliment and drink most appropriate
to the Scrofulous diathesis. The certain
Therapeutic Means have been found. when
combined with this most indispensible
and primary measures to aid their action
& to hasten the cure of Scrofulous
affections. In the first rank must be
placed Sulphurous Sea water & Iodated

Baths the preparations of Iodine admin-
-estered by way of bath and internally
are often singularly efficacy in Scrofulous
complaints. The antiscorbutic Syrup.
Bitter Orange Peel; doses from ℥ij - ℥iij
The Infusion of Hops & other bitters
are also very commonly prescribed
for Scrofulous Children. The Hydrochlor
of Baryta and of Lime the Subcarb of
Soda Chalybeates and mercurial prepara-
-tions. The treatment of Scrofulous Tubercles
by local means is still deserving of very
particular attention. The resolution and
Suppuration of the Tubercles are accelera-
-ted by rubbing them with an Ointment either
of the Deuto Iodide of Mercury or of the
Iodide Sulphur. The Ulcers are Stimulated
into better action by washing their Surface
with Wine. a weak Alkaline Solution

1869

AN

Inaugural Dissertation

ON

Prophylaxis and Hygiene;

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

William P. Manning.

Of

Virginia.

Session of 18

In accordance with a provision of the University of Maryland; and in compliance with a custom which has marked the career of medical institutions from time immemorial, we lay before you, and submit to your examination and consideration, a short disquisition on the importance of Prophylaxis and Hygiene; and though we do not expect to add lustre to the brilliant accumulations of

medical literature already collected, or propose any new measures striking or original in themselves; yet we will insist upon the paramount importance of the subject treated, and briefly consider some of its practical bearings.

No subject probably, better merits the attention, or more prominently demands the careful and patient investigation, of the humane intelligent and scientific physician than the one under consideration.

Prophylaxis from the Greek πρό before, and φύλασσειν. to guard, as taken in a medical sense means prevention, or defending from disease; the mere signification of the word, would therefore suggest its importance, and render it a matter of intense interest not only to the physician, but to every one, Many diseases are prevented by removing or obviating their causes; consequently the study of Etiology is of the utmost practical

importance and just in proportion
to our knowledge of biology does
prophylaxis acquire a rational
and scientific basis,
We may now adduce some of
those measures best calculated to
illustrate the claims of this
agent, upon the medical profession,
First and by far the most promi-
nent of these, is <u>vaccination</u>, for
which great boon the human
family owe Edward Jenner an
eternal debt of gratitude, since

of all the benefactors who have ever lived, none have conferred such immense, manifest and lasting benefits upon mankind, The discovery was first promulgated in the year 1798, after a series of observations and experiments which had occupied his attention for more than twenty years, The practice of vaccination met at first much opposition and hostility, and the most emi-nent Physicians and Senners

best friends, advised him to abandon the project, But Jenner firm in his convictions, persevered, and lived to see his great discovery triumph over all opposition, and witness some of the beneficent results of his labors, which have made his name immortal, The practice was first introduced into this country, though very much opposed by popular, prejudice, by Benjamin Waterhouse of Boston, and universally prevails

at present. The scope and character of this dissertation, will not permit us to enter into any thing more than a cursory notice of any individual prophylactic agent, One of the most practical points connected with, vaccination is the discrimination between, true and complete, and incomplete or spurious vaccinia; this can only be determined by the development of vesicles of full size, the successive stages, and duration

of the affection, taken in connection with the appearance of the vesicles and resulting cicatrices; simple sores having no specific character may be the result of vaccination; this is termed by Trousseau vaccinoid,

In view therefore of the immense importance of a veritable vaccination, the practice so frequently resorted to of being vaccinated by ignorant and irresponsible parties is to be deprecated and

should be abandoned, since it may lead to the most pernicious results, for it is manifestly far better, that a person should not have been vaccinated, with a knowledge of the fact, than to be lead into a false security and consequent exposure to the disease, which he believes innocuous, by reason of his immunity through vaccination, another important consideration connected with vaccination, is, the period of time

which should elapse before revaccination, this however seems to be dependent on constitutional causes, that the only safe criterian is, vaccinate whenever small pox prevails; the number of cicatrices seems to exert an undoubted modifying influence, as shown from the analysis made by Simon, of nearly 6000 cases of small pox, The ratio of death among those who had been vaccinated, but who showed no cicatrix, was 21 3/4 per cent;

those with one cicatrix 7/8 per cent; those who had two 4/8 per cent; those with three 1 3/4; and those with four or more only 3/4 per cent; if this statement be correct, it behooves us to make several punctures, and to examine carefully old cicatrices, and be governed accordingly.

We may now consider briefly those means, which seem to ward off, or prevent malarial fevers; the cause as their name implies involves a

special morbific agent known as malaria; which affects by preference low and moist localities; it does not seem to be developed at a temperature below sixty, and its active agency is checked by a temperature of thirty two, among the most approved, preventions, is elevation above the source of the poison, and if this be impracticable, two points should be aimed at; the first to prevent or obviate local, and avoid drifting

malaria; for the first, having the ground, or covering it with herbage kept closely cut; for the second, belts of trees, or houses so built as not to present openings towards the side of the malarial currents; to remove the intercurrent causes our only means at present are the administration of antiperiodics, of which quinine is the best, combined with good, nutritious and generous living.

The principal prophylactic measure in Cholera seems to be rigid attention to the bowels, and so soon as the slightest symptom appears, it should be immediately checked; the cholera stools should be carefully looked after, since it seems highly probable that it is the putrefying stage of the excrements, which is most efficient in spreading the disease, but all writers on the subject lay particular

ular Stress upon Checking the diarrhoea, The Stools should be mixed with perchloride of iron, the chloride, or Sulphate of zinc carbolic acid, or the carbolate, and then deeply buried. It would be useless in a simple dissertation like this, to attempt anything like a thorough consideration of the various means employed as prophylactics, in all the different diseases, We will therefore dismiss the subject of prophylaxis after having

mentioned one agent recommended by our distinguished Professor of Women and Children, and also favorably noticed by the eminent Gentleman filling the Chair of Materia Medica, we allude to belladona as a preventive in Scarlet fever, this may be given in minute doses with very good effect; it should be administered till the physiological effects of the drug are most manifest, and then discontinued, to be again resumed,

Having very succinctly and superficially referred to the subject of prophylaxis; we will now concisely addduce a few of those fundamental laws, the due observance of which preserves health in a state of more or less perfect integrity, and whose infraction entails its reward upon the unfortunate individual; These laws have been denominated Hygiene, or the art of preserving health, In other terms it aims at rendering

life more vigorous and comfortable, and seeks to delay death as remotely as possible, The art dates back to the remotest antiquity being probably coeval with the first appearance of disease; even before the time of Hippocrates we find treatises on hygiene; it was then based upon observation alone, and consequently remained within very narrow limits; until physiology began to be studied giving to it a scientific basis, and new

interest, hence, commensurate
with our knowledge of physiology
or the laws of life, will be our suc-
cess in establishing rational hygiene,
It would be impossible to make
gen rules sufficiently comprehen-
sive, and at the same time
precise enough to meet every
possible case,
"Temperance and exercise" was an
old maxim laid down by the
oldest authors, as containing the
essence of health, and if we

interpret temperance as it was probably meant, that is, a sufficiency of all things, and an excess in nothing, the present signification of hygiene will be pretty thoroughly expressed.

Among the most important general hygienic measures may be reckoned, proper and slow mastication; for it is well known many affections of the stomach called dyspepsia, arise from faulty mastication, or from swallowing food

too rapidly, The exact amount of exercise must be determined by the individual himself; as a general rule however few take sufficient exercise in the open air, as is shown by the difference of health in those who do and those who do not; Attention to the skin is of the utmost importance, The skin should be kept clean and well clothed, The care of the bowels should form a matter of personal hygiene

and this may be generally regulated, without the aid of medicine, Hope, cheerfulness and all the exhilerating passions are as many aids to health, probably by their effect upon dijistion, We can however look only for a perfect system of hygiene when physiology is thoroughly understood, and who knows but the day may some time dawn, when disease will result only from gross neglect of well established, well understood measures, of Prophyaxis and Hygiene,

AN

Inaugural Dissertation

ON

Death

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

James K. Phillips

Of

Dorchester Co. Maryland

Session of '68 & 9 Ending Mar. 3d 1869

Death

The physician must always keep the great objects of his profession in view: the cure of disease prolongation of life, and alleviation of suffering.
In doing this he combats disease primarily but at the same time man's common enemy, death. It would not be the part of a good general to neglect any opportunity to find out the nature of the enemy he is about to engage. He would learn whether he is about to oppose a strategist, a dashing foe or headlong slaughterer of his men. What feints he is likely to make,

and by what avenues of approach he is likely to make his attack.

Is it any less incumbent upon the physician, who also has the lives of men in his hands, to know what his enemy death is? its avenues of approach, the character of its different forms, and the means by which the tendencies thereto in either form may be obviated?

This subject is not one of mere scientific interest. If it was there is no reason why it should not be discussed. But it is of practical importance. If death threatens through the nervous

system it is that which demands treatment, if the circulatory it must be met there, if the respiratory or a complication of two or more the remedies used must be chosen accordingly. Thus seeing the tendencies to death by a particular mode, and having a thorough knowledge of our subject we may guard against them rationally.

What is Death? It is that pathological change in the human system by which none of the functions of its various organs can be performed any longer.

The human body has been compared with an engine, the analogy not differing materially, except in as much as the organizing power in one case is in itself, and in the other outside.
The food has been called fuel - through which power is generated, and the various organs have been likened to the different parts of that invention of human ingenuity. When an engine ceases to "work" as it is called a machinist is sent for; and what does he do? He first endeavors to find out why it has stopped, what part is incapable of performing its allotted

work. The fault may be in the furnace, boiler, one of the cylinder valves, the piston may be broken, the governor may have failed to guage the amount of steam, the various self-acting and self-adjusting rods may be out of order or any one or more of the various accidental causes may operate.

So may the organs of the human system cease to "work". This human machine, physically operating, is much more complicated it is true, but this fact should not discourage us. It should rather arm us with new courage

in examining the mysterious, and beautiful workings of this piece of Divine mechanism, which is in every respect so wonderfully and fearfully made. Each organ has its allotted function to perform, one to keep up repair another to excrete, all being nicely and delicately adjusted to form a composite whole. It is not at all strange that we should often be at a loss to know the exact cause of the separation of soul and body, as the human mind can not understand the divine and fathom the mysterious relations God has

seem fit to create between the vital and physical forces.
While this is true yet at the same time there is much still to learn by the accumulation of new scientific facts and humbly proceeding by induction to more general truths founded upon these simple ones gained from that great source of knowledge, observation of nature.
It has been said by one of the wisest of men that we must enter the kingdom of science as little children, and through its five gates the senses.
This is particularly true of

medicine and it seems to me one of the simplest and most natural questions, is: Why has the machine ceased to "work"?

The answer which Galen would have given would not have united Cullen nor Cullen's Touraine, and thus it is for all the different schools, and we are truly left to our own judgments to decide where "doctors disagree." Empiricism and Rationalism carried into practice by ultra men are so far as our humble convictions go the Scylla and Charybdis in medicine which we are to avoid

by keeping between the two in the more strict but salutary waters of an enlightened Electicism as seen in the practice of Trousseau.

There are three functions called vital performed in the heart, the lungs, and the nerves. Upon the cessation of either of these all others cease and we have that state called death.

Bichat was the first to make this distinction, and was accustomed to speak of death at heart or lungs or death at the head.

This nomenclature was thought by Watson to be good in the main

but deficient and unsatisfactory. It is impossible to treat our subject in detail, and therefore we will have to be content to make a few cursory remarks concerning each division.

The first of these modes by which life terminates is very appropriately termed Anaemia. This term explains itself, α privative (not αν) and αἷμα blood signifying the absence of that amount of blood in the heart which is necessary to stimulate that organ to contraction. That this condition does exist has been sufficiently proved by experiments on the lower animals.

Anaemia is marked by pallor of the countenance, a slow irregular pulse, dimness of vision, and if the patient be not relieved vertigo and convulsions generally terminate the scene. The bursting of an aneurism or bleeding after childbirth are typical of this form of dissolution. The indications for treatment are to avoid death by the use of those remedies which will soonest add to the amount and quality of blood circulating in the arterial vessels.

Liquid food as milk and beef tea are are readily absorbed, and promptly supply the deficient

amount, and the preparations of iron soon improve the quality. Transfusion of blood has been tried but so far, its application has only been temporarily useful.

Whenever air is absent or prevented in any way from entering the lungs death may be said to commence at that organ.

This state necessitates the circulation of venous blood through those vessels which should alone carry arterial, and thus the poisonous influence of the carbonic acid is exerted while the tissues are deprived of oxygen

There are several varieties of this

forms some of which it is only necessary to mention that they may be understood. We have drowning, smothering, choking and strangulation. In addition to those forms of Apnoea to which names have been given we may have some mechanical impediment interfering with the expansion of the chest as in pneumonia. If there is an opening in the thorax the air will escape without entering the lungs.

In case of apnoea the respiratory muscles at first are vainly contracted, a few struggling efforts at respiration are made, and an

agonizing sensation is experienced. This however soon passes off and is succeeded by not unpleasant feelings of vertigo, and convulsions soon follow; the muscles relax, the sphincters yield and the only sign of life left is the radial pulse.

There is but little to be done in these cases but what common sense would dictate to the unscientific man. Artificial respiration and electricity are the only remedies the physician can use in acute cases. A trial of them should not be omitted. In pneumonia the distress may be greatly alleviated by heart, and arte-

rial sedatives.

In considering death at the heart we shall include those forms which are due to impressions made primarily upon the nervous system.

Asthenia is one of those expressive terms with which we always like to meet and indicates a lack of that nervous force which is necessary to the heart's contraction. The immediate cause of dissolution is cessation of the heart's action from weakness, but the primary cause, and consequently the one to which our remedies are to be directed, is seated in the nervous system. Examples of this are

found in phthisis, nervous shocks from amputations etc.

The indications for treatment to avoid a fatal termination are to support the flagging powers of life with tonics or stimulants according to the necessities of the case.

In conclusion we shall speak of Coma, which is a certain morbid state of the brain, of which we know little except that it produces stupor, slow irregular and often stertorous breathing, until finally the blood is no longer aerated, and venous blood is sent throughout the system. Many diseases both

acute and chronic and by Coma
as seen in poisoning in many
forms, also Apoplexy and hydro-
cephalus. If this conditions is only
a suspension of life or we treat
it in time artificial respiration
and such stimulants as will
arouse the nerve forces will be
successful.
While it is well for us in practice
to keep these different forms of
vital depression in mind yet
we must recollect that in all most
all diseases except the most acute
there is a tendency to death from
more than one form. The same
disease too in different Constitutions

or under different circumstances
may be characterized by different
tendencies. Hence it is we can
not, after diagnosing a disease
treat it, as some would have us,
by set formulae as though we
were solving a mathematical
problem

AN

Inaugural Dissertation

ON

[illegible]

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

[illegible]

Of

[illegible]

Session of 18[illegible]

Conclusion

The great end and aim of medical science is the alleviation of human suffering and that may be considered as a boon which will in any manner contribute to so useful and desirable a result.

The formidable effects which so often follow surgical and obstetrical operations rendered an agent a desideratum which by making these patients insensible to pain would prevent them. The discovery of Ether supplied to the profession this vacancy in the paraphernalia of medicine, Its use however was attended with some disadvantage being unpleasant to inhale, and in some instances producing spasm and delirium

which detracted from its merits and thus called for an other agent which was soon supplied by Chloroform.

Soon after the introduction of Ether in this country Chloroform was discovered by Guthrie in the United States Soubeiran in France and Liebig in Germany in the year 1831 but its nature chemically was not understood until revealed by Dumas in the year Eighteen hundred and thirty four.

By him it was ascertained to consist of three Eqs. of Chlorine with one Eq. of Bicarbonate of Hydrogen or in other words a Terchloride of Formyle. As Formyle is a Bicarburet of Hydrogen the formula of Chloroform is $C_2\ H\ Cl_3$.

It is prepared by distilling together Chlorinated lime alcohol and water. Two liquids are collected in the receiver the heavier of which is chloroform though not yet pure. It must be washed with water to remove alcohol solution with carbonate of soda to remove chlorine with dry chloride of calcium to seperate the water and finally redistillation the product now received is pure.

It is a remarkable circumstance probably worth mentioning that many of our most valuable remedies are those in which Chlorine enters largely as a constituent. Chloroform is a colorless liquid of a pleasant apple like odor and a warm pungent somewhat agreeable taste

It is very volatile and boils at 142° F.
Its specific gravity is 1.49. It is but-
slightly soluble in water requiring 2000
parts of that liquid, though very readily
dissolved by alcohol and ether.
Its solvent powers are very great dissol-
-ving even Guttapercha. It yields a great-
-er number of drops of a certain measure
than any other liquid.
The credit of first bringing Chloroform
into use as a medical agent properly
belongs to Professor Simpson of Edinburg
he first administered by inhalation to
alleviate the throes of parturient women
with such success that he wrote a
pamphlet recommending it in exalted
terms to the profession.

In an incredible short space of time.
It came into use over the whole
civilized world and has become a
very important auxiliary to medical
science.

This drug coming into general use
it is important that we have correct
ideas upon its Physiological effects and
therapeutic applications.
Though I am unable to say any thing
that you have not already heard
it may serve as a criterion of my
attainments as well as to impress
that which in the multiplicity of other
knowledge might be completely lost.
The indications for the use of
Chloroform are first to alleviate and

prevent pain 2nd to relieve spasm 3rd to promote sleep 4th to calm nervous irritation
The contra indications are 1st in debilitating and disorganizing diseases of the brain,
Such as the advanced stages of meningitis cerebritis atonic convulsions &c,
2nd debilitated states of the heart for instance dilation vascular disease fatty degeneration of that organ and feeble action 3rd constitutional tendency to syncope 4th The existence of intoxication &c. 5th General debility from any cause
Besides in cases of existing or threatened congestion of the Lungs, Brain or any of the great viscera
Chloroform is administered by three modes

by Inhalation, by the Stomach and by the Rectum. The modes of Inhalation are very numerous and very important also since many of the fatal results no doubt are attributable to its wrong application.

In this respect the great objects which should govern the process is that sufficient atmospheric air must be admitted to support respiration. Numerous Instruments have been invented for this purpose and are recommended for facilitating inhalation, but among them all the safest and most efficacious manner seems to be that in which it is poured on a loose towel or handkerchief and applied in a funnel shaped

over the mouth and nose.

The simple reason of this is that a certain quantity of Oxygen is required to sustain animal life.

If it be retained therefore by the Chloroform life is as effectually destroyed as if pure Chlorine gas were inhaled.

When the vapor of Chloroform is inhaled in any manner it proves slightly irritant to the Bronchial tubes. This is manifest by the patients repugnance which is so great in some instances as to almost preclude its employment.

When its effects begin to be manifested the following phenomena are observable

1st. the respiration becomes hurried noisy and a singing of a vibratory character

are heard in the heart. 2ed Anesthetic action and 3rd is that of profound narcotism and muscular relaxation

Chloroform affects the nervous system through the medium of the blood.

It is known to affect. 1st The Cerebrum 2nd Cerebellum 3rd Spinal cord and lastly the medulla oblongata, if the latter be too profoundly impressed life will be extinguished, there is generally some struggling and spasm before the patient gets fully under its influence, This at last gives way deep insensibility succeeds and the patient is entirely unconscious of external impressions,

This is the period in which Surgical operations are generally performed

Though insensibility to pain is nearly last before consciousness is diminished.

Its inhalation fulfills three General indications, Anodyne, Antispasmodic and Anæsthetic.

As regards the opinion of different Professors upon the properties of this medicine there is a great diversity. Some think it Sedative and others Stimulant. As given by our eminent Professor if taken into the Stomach, the first marked effects of it are warmth and Stimulation.

In large doses it acts as a nauseant Irritant and Poison. By Inhalation the Stages of excitement are similar only more rapid.

The pulse is affected in the following manner. first minute of administration it is increased. Second still increasing, third decreasing and fourth below natural.

The advantages that it has over Ether consist in its being a better anesthetic more pleasant to inhale and a smaller quantity is required to produce the same result. It is also much quicker in its action.

The only thing that has detracted from Chloroform any of its merits is that it cannot be carried so far, as the medicine becomes a poison and death will result from asphyxia with general nervous congestion

Especially of the lungs.

Such appear to be the successive stages in the action of Chloroform, but sometimes however this regularity is interrupted and the influence of the poison extends to the nervous centres especially of the heart including the ganglia of the Cardiac tissue bringing on sudden prostration with cold skin sunken features and vanishing pulse.

In such cases death ensues almost immediately from the hearts action ceasing and the patient dies of Syncope

Chloroform is largely used as an anodyne in Obstetrical cases to relieve

the excessive pain with which some parturient women are affected.

Chloroform has completely revolutionized obstetrical operations.

The various operations which were performed before its introduction considered so dangerous are by its aid rendered comparatively safe and easy

The great difficulty in Inversion was the pain attending contraction of the Uterus. Chloroform by suspending these removed the great obstruction.

It relieves the pain without preventing the contractions, on the other hand rather promotes them. It has been used with the greatest success

in Puerperal convulsions and in the cure and prevention of Eclampsia, given frequently it will often prevent the occurrence and may be given in almost all cases when there is much pain without much risk, if past experience serves a present Prognosis,

The Cesarian Section which was so terrible from the resulting shock has been modified by the blunting agency of this remedy. It is used to relieve irregular or hour glass contractions of the uterus to dilate an undilated os uteri to soften the rigid soft parts in convulsions occurring in weak

and irritable habits and finally
to prevent the nervous shock to
those frail and delicate constitu-
-tions which would sink beneath
it.

If this were all it was capable
of accomplishing and its uses had
extended no farther we would
say in enthusiastic terms that
an immence boon had been conferr-
-ed upon the human family by its
discovery.

This however is but a little in the
vast domain of surgery it is pro-
ductive of the greatest good.

In surgical practice it is used as
an anesthetic for the prevention of

pain and as an anodyne to the nervous system.

Indicated to diminish sensibility and prevent the nervous shock of formidable Operations but should never be used in bloody Operations about the mouth or throat as the patient could make no effort to expel the blood it would recede into the Pharynx and thus suppress the breathing thereby produce death.

It has proved of incalculable service in the reduction of dislocations to relax the muscles as well as to relieve the spasm and excruciating pain attendent upon the passage of the urinary and Biliary

Calculi in those diseases. Also in Hydrophobia and Tetanus both traumatic and idiopathic.

The only well authenticated cases of recovery from Tetanus are those in which Chloroform was used. In Hernia by protrusions it has been used with exceedingly effect to relax the muscles and thereby render them more easy of reduction.

In medical practice its principal use is as an antispasmodic in the various spasmodic diseases such as spasmodic asthma Laryngismus Stridulus Delirium Tremens, Whooping Cough Epilepsy Puerperal convulsions and might be used in

Spasmodic Croup.

By some it is recommended in Hysteria and Intestinal spasm it will cut short the paroxysm when other means prove unavailing.

In Neuralgic pains no remedy is more speedy and more efficacious for the time, merely as a palliative but has no control over the condition from which the disease originates.

By some it has been lauded in Pneumonia, though rarely if ever used in this country.

It has been employed with asserted benefit in painful inflammatory affections such as Carcinoma

-tous affections, Phlegmonous Furunculus swelled Testicles inflamed glands and also in injuries as sprains bruises &c.

I do not wish to be understood that it is the remedy in all of the above cases mentioned.

Administration} The mode of administering chloroform by inhalation I have already mentioned, The quantity usually employed is from ʒi to ʒii poured upon the inhaler then applied over the mouth and nose which may be repeated in a few minutes if no effect is produced.

If we do not wish to produce anesthesia we may lessen

the quantity and time of inhala-
-tion and thus have the desired
effect.

It should never be inhaled immedi-
-ately after eating, you should remove
all constrictions from the wrists
and neck.

When you in obstetrical practice
if the uterus is enfeebled from
any cause the inhalation should
not be carried too far twenty
or twenty five M. will generally
suffice

The dose for internal administra
-tion is from twenty to sixty M.
which may be repeated every half
hour, hour or two hours and

generally increase if necessary until the desired effect is obtained or nausea or some other unpleasant symptom is produced.

It is best given in oil or emulsion or dissolved in alcohol Chloroform one part alcohol six parts.

By enema from gss to ʒj of Chloroform may be administered which in order to obviate irritation should be made into an emulsion as above recommended.

When the effects of Chloroform inhalation are carried too far, the proper remedies are the horizontal posture, cold air dashed upon the face cold

water, to the head and friction
and heat to the body and extremi-
ties, and ammonia to the nostrils.
If these fail, artificial respiration
must be resorted to.

Thomas. P. Sappington
of
Maryland.

AN

Inaugural Dissertation

ON

Dyspepsia

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Henry E. T. Manning

Of

Halifax County North Carolina

Session of 1868 & 69

Dyspepsia.

This harassing disorder which has long been the scourge of successive millions of the human race was once thought to be due to some organic lesion immediately connected with the organs concerned in digestion, but experimental researches have proven that it is a mere functional derangement arising from some cause militating against the due performance of the digestive act, as the term indicates.

Of all the affections to which the stomach and intestines are subject the greater

proportion are connected with the varied and successive changes which the food undergoes in the body preparatory to its assimilation, constituting the function termed digestion. Digestion takes place principally in the stomach and small intestines, though experiments have demonstrated that food when introduced into the large intestine is appropriated to the purposes of nutrition, the probable explanation of which, as given by Prof Flint, is that it is performed vicariously.

This disorder according to most authors, exists under two forms

which are designated as the acute and chronic stages. The acute, if I conceive aright, denoting a mere temporary non-performance of the digestive act as an immediate and attendant result of some sudden emotion or imprudence in eating, constituting what is commonly called a fit of indigestion, while the term chronic relates to a more persistent form of the disorder attended by a protracted retardation and impairment of the digestive function.

I am at all times particularly averse to transcending the bounds of deferential respect due

to the many illustrious persons who have treated of this subject so far as to diverge from the rules laid down by them; but as I design making this essay a mere compend of the views of others with, perhaps an idea of my own interpolated now and then. I have concluded to treat of this affection in a general sense, with a view more to brevity than to a strict adherence to the forms laid down by others. I shall however advert to all its different phases in a cursory manner.

Our knowledge of the pathology of this disorder is necessarily

somewhat restricted, so much so that we can merely say that it is a functional disorder pertaining to digestion, and finding in that function and the various processes connected therewith its incipient symptoms and ultimate results.

Symptoms, Course, etc. In some instances the attacks occur suddenly and unexpectedly after a full meal, severe mental or bodily exercise, or anything which tends to depress the nervous system. It is first made manifest by a sense of fullness and uneasiness in the epigastric region, dull pain in the head with a general languor of the

whole body. nausea and vomiting
sometimes supervene accompanied
not infrequently by purging
with slight febrile movement.
After which a peculiar aversity
to any exertion, loathing of food,
tongue slightly coated, an acrid
unpleasant taste with feelings
of general malaise. Following
these there is pain in the epigas-
trium, often extending to the
hypochondria, eructations of wind
with regurgitations of a bitter
acrid liquid into the mouth.
Among the many sympathetic
affections consequent upon an
attack of indigestion are sick-

considerably in different cases.
There is more or less emaciation
with pale sallow skin and an
anxious expression of countenance.
This disorder though at first
purely functional sometimes
becomes organic; severe inflamation
of the stomach is established,
and the patient being debilitated
from long continued subjection
to this disorder at length suc-
cumbs to the intercurrent disease.
It was once thought that the
debility attendant upon dyspepsia
predisposed to phthisis, but
facts have shown that the
latter is seldom, or never, the

direct result of the former.

It is of no little importance to distinguish organic diseases of the stomach from dyspepsia. In inflamation of the stomach or intestines the pain is severer and the tenderness greater than in dyspepsia, with a pulse more tense and not infrequently faster.

The tongue in this disease is often red with an altered surface which is rarely seen in dyspepsia. Stimulating drinks and food generally give uneasiness in this disease, while in dyspepsia if not very acceptable

they are taken at least without loathing. When mucous or bloody matter is vomited we may divine the cause as being that of gastritis. Fever and diarrhoea is more apt to be present in this disease than in dyspepsia. In an attack of indigestion if the symptoms above named as being incident to gastritis become developed we may infer that inflamation has supervened.

Causes.— The most prolific cause of dyspepsia is probably imprudence in diet, sedentary habits, and severe mental taxation.

To which may be added, the excessive use of sedative narcotics; such as wine, tobacco, opium etc; the ingestion of large quantities of cold or warm drinks when the stomach is too much enervated to react; also the depressing emotions when too much indulged in, as grief, anxiety and fear. Exercise is indispensable to the support of every part of the body. Hence, when not indulged to a certain extent the stomach suffers for the lack of it, so when the stomach is debilitated if the

quantity and quality of the food be not apportioned to the impaired energy of the stomach it might detract somewhat from the strength of the whole system, while the stomach would not materially suffer. Food if swallowed without being well masticated acts as a mechanical impediment to the action of the gastric juice, and thus operates as an indigestible substance. Anything that detracts nervous energy from the stomach by concentrating it in other parts weakens the action of the stomach

and favors the establishment of dyspepsia.

Pathology. — It would seem from what has been said that dyspepsia is an affection due either to a want of the usual supply of nervous influence to the stomach, or from a loss of tone or activity consequent upon undue excitation. In the process which the food undergoes in the stomach, the stomach performs two offices: first, the secretion of the gastric juice for the solution of the food, and, secondly, the admixture of

the food with its juice by its peristaltic action. It secretes less juice when in a state of ease than when in action, hence when food is taken especially such as is of difficult digestion, it remains longer undissolved than usual, giving rise to symptoms before mentioned. When there is gastric depression not infrequently a similar condition is produced in other parts of the body, probably from the same causes or by sympathy with the stomach. The numerous nervous disorders attendant upon this -

disease are due partly to the operation of the causes which gave rise to it upon other parts of the system, but principally to the extended and intimate sympathies of this organ. When complications of this kind ensue the repeated nasal irritation often results in inflammation.

Treatment.— This relates principally to hygienic measures. In the first place, the causes giving rise to it should be carefully removed, the paramount indication for this purpose being to properly regulate the quantity

of food and exercise of both body and mind, as well as the general habits of the patient, moral as well as physical.

Diet.- To attempt to lay down a rule as an invariable and universal guide would be out of place here, as it would necessitate a minute enumeration of such substances as should be allowed or inhibited. One who is a prey to this affection will after a time learn what particular kinds of food are best suited to his particular case, hence the best rule is

to eschew such kinds of food as are said to be of difficult digestion, and use only those which experience has shown to be of easy digestion. The peculiarities of different stomachs are so varied and numerous that an article which would be easily appropriated by one would prove almost indigestible by another. As a general rule a dyspeptic should be directed to use such food as his or her experience has taught to be easily digested, without taking such a variety merely to

but- the capacity and strength of his stomach. The kinds of food which may be, and by one suffering with this disorder are numerous, but- the number of them which should be avoided far exceeds them.

Of the substances which can often be taken we may mention, first; those derived from the vegetable kingdom, as stale wheat-bread, crackers, boiled rice, mish potatoes, also sweet potatoes when dry and mealy, tomatoes well prepared, ripe peaches blackberries etc.

Such articles as boiled milk. fresh butter, tender mutton or beef and turkey are often very acceptable. It is said that the flesh of wild animals is more digestible than that of domesticated ones. There are many other articles of food and drink which may be taken in moderation, but I have always deemed it best to allow the patient to consult his own feelings and inclinations to some extent. There are many precautions and requirements to be observed, but as I am before intimated

my design of making this
essay as brief as is consistent
with the magnitude and
importance of the subject.
I'll resign a more extended
discription to abler hands.
Exercise. – This should always
be regular and never pursued
in the fatigue, but properly
timed in relation to the
times of taking food. Not
just before, nor immediately
after eating, but at stated
periods and then only
indulged in until the whole
body is in a healthful glow.
The permanent object is to so

equalize the excitement - as to
give to each and every organ
its due amount of blood
and nervous influence, which
is best attained by a
combination of active and
passive exercise.
General Habits. - The patient
should be scrupulously exact
in all his habits. Always
having a regular time for
exercise, and never indulging
his inclinations either as to
eating, drinking, or letting
exercise too freely. Excesses of
all kinds to be sedulously
avoided, and if engaged in

any pursuit which taxes the mind or body unduly it should be kept off temporarily. Yet the mind should be occupied with something, for fear that the thoughts may be concentrated exclusively upon the affliction, and thereby aggravate it. Everything which tends to depress the mind or awaken any of the depressing passions should be removed, or counteracted as they are fruitful sources of dyspepsia.

Medicinal Treatment.— There is probably no agent in the materia medica that would be

of much avail unless in conjunction with suitable hygienic measures. The first object to be gained in the incipient treatment is to keep the bowels gently moved by mild aperients. Give tonics to keep up the strength of the system, taking care to avoid such medicines as irritate the stomach, but endeavor to select those which combine a tonic or stimulant with their laxative power. It would be far better to keep up regular alvine evacuations by means of diet alone, but-

such articles as would for this are mostly of difficult digestion.

As this is not written for the instruction of medical men but merely to gratify a desire of my own, and more in accordance with an old established rule of our time honored institution, I shall do no more than say in a general sense, that the great desideratum is to regulate the diet, exercise, and general habits, as to maintain unimpaired the stomach.

AN

Inaugural Dissertation

ON

Dysentery

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Thomas Seth Holt,

Of

Caroline County, Maryland.

Session of 1868-9.

In accordance with the duty imposed on me by the rules of the Medical Faculty of the University of Maryland, whose lectures I have attended, to the end of their prescribed time, to write a Thesis on some particular disease, I have chosen for that purpose the disease commonly known by the name of Dysentery, or Bloody flux, and which is described as inflammation of the mucous membrane of the larger Intestines, attended with griping and tenesmus, frequent mucous bloody and purulent ejections and irregular discharges of Scybalous feces. This disease

occurs more frequently in the warmer Seasons in the colder latitudes and still more so in the Summer and Autumnal Months than in any other Season of the year; but it may show itself to a greater or less Extent under particular circumstances at any time or place. Believing, as I do, that it should be divided into two Stages or varieties, I shall call one the Acute and the other the Chronic, and for the production of the Acute variety, I shall here undertake to enumerate Some of the Causes, according to Some of the more Ancient as well as more

Modern Authors. The principle causes of acute Dysentery appear to be the relaxation from heat with sudden exposure to cold and wet; indigestible food, such as unripe fruit or unwholesome food of any kind; the abuse of Spiritous liquors and drinking of bad wine; contaminated water, any of these causes may bring on attacks of the disease in climates and situations where it commonly prevails. It is also said by some that deficient clothing and Exposure to the vicissitudes of weather or breathing the confined or foul air of camps, Jails and

other filthy places, are frequently the causes of the most severe illness of this disease. It is supposed, again, by others, that marsh and animal effluvia and malaria of other kinds contribute in many instances to its production; because, according to these Authors, this disease occurs in the climates, situations and seasons favourable to the generation of periodic fevers and is moreover, occasionally combined with those or appears to succeed or supplant them. The very observant Sydenham, in his day, and since his time, Moseley, and other West Indian

writers, have contended that Acute Dysentery was a fever of the season thrown upon the bowels, by means of a great and sudden suppression of the perspiration; consequently the restoration of perspiration constituted their leading, if not their sole, object in the treatment of the disease we are now considering. Indeed, from what has fallen under my own observation in the section of country where I live, and where the disease frequently prevails to a great extent, and where also, at such times, the intermittent and remittent fevers which are, at other times, very prevalent

seldom make their appearance, there is abundant reason to think, that in many instances the severe dysentery is produced by these fevers being turned in upon the intestines; and one of the best proofs that I have for supposing so is the fact that the best practice of the physicians in our district, together with my own success in the treatment of this, at times formidable disease, has been with the same medicines with which we so certainly cure those fevers. Diagnosis. The only disease with which dysentery can possibly be confounded are cholera,

Hemorrhoidal flux and diarrhea.

The rapidity of the march of cholera, compared with the long duration of dysentery, is done an important ground of distinction between them. Cholera occasionally ceases in twenty four hours and perhaps never lasts beyond a week, whilst the mean duration of dysentery is probably about a fortnight and many cases linger for months. Vomiting is a uniform attendant of cholera, but is seldom observed in dysentery. The purging, during a considerable part of the course of dysentery, is mucous or muco-sanguinolent, whilst its prevailing character in cholera is

bilious, Tenesmus is a most distressing
Symptom of Dysentery, but in Cholera
it is generally absent, In Cholera the
alvine discharges are copious and
are paged with violence; the very
reverse is the rule in Dysentery, and
the former disease is attended with
Spasms of the Extremities, which are not
perceived in the latter. The tumors
at the margin of the Anus, the blood
flowing from the commencement
of the disease, unmixed with mucous;
the comparative absence of tenesmus,
the freedom from abdominal pain
and the Solid nature of the feculent
discharge, all of which are observed in

Hemorrhoids will secure us from confounding this disease with dysentery; and for all practical purposes, the tormina, tenesmus, the scybalous matter, the mucous and bloody discharges from the bowels in the proper acute dysentery, are, I believe, at all times, sufficient to distinguish it from the bilious, watery, slimy, and sour alvine ejections of an ordinary or even a bilious diarrhoea.

Prognosis. Either variety of dysentery may be fatal, but what I consider to be the chronic is much more dangerous. The acute, with good early treatment, is generally quite

manageable; but when allowed to become chronic and ulcerative, through neglect or bad treatment, recoveries become much more doubtful.

Treatment. With regard to the treatment of acute dysentery much has been said by both Ancient and modern writers and with considerable discrepancy; and many respectable and learned practitioners of the present day differ very widely in their opinions, not only as regards the nature of dysentery, but also, as a consequence of their difference, in their treatment of the affection; for whilst some have recommended venesection and purging

with calomel and castor oil to prepare the way for astringents and narcotics, others have deprecated the use of the lancet and Mercury in all its forms, and have trusted entirely to leeches, fomentations by swathes of flannel, moistened with warm water, mint tea, brandy and other fluids passed around the abdomen, blisters to be used for counter irritation; these remedies in conjunction with the internal use of Enema of various kinds; narcotics and astringents. Others again, denying the efficacy of narcotics and astringents, ~~and~~ have placed their entire reliance in aperients,

tonics and stimulants while their are still other systems or plans of treatment, equally differing from each other, that have been set forth at different times by writers and practitioners which I conceive to be unnecessary to enumerate in a dissertation of the character I am now writing. It seems, however, that all of these plans, discordant as they are, appear at times to have been successful to a considerable extent, and I therefore suppose that one of the chief reasons for so many conflicting opinions of treatments has been and still is that acute hyperten-

under certain circumstances, and
in certain seasons and climates,
has been and still is produced
by certain complicated causes,
which causes determine to a greater
or less degree the degeneration of
the more Sthenic forms of the
disease into the Chronic or ulcerated,
and which causes or complications also,
I am inclined to believe, not only give
rise to the various forms of intermittent,
remittent, and bilious fevers, but also
determine their degeneration into
Typhus or Chronic ulcerative forms.
Experience has taught us in our
locality to place our whole dependance

in the treatment of acute Dysentery, on venesection or leeches, or both, on opiates, saline aperients, astringents, alcoholic and vinous stimulants, on clysters and fomentations over the abdomen, with sudorifics and quinia, variously combined. The latter article in every case is our only hope for successfully combating this formidable disease, since from its complications with malaria, we must treat it as we would an intermittent, remittent, or bilious fever, if they were present, with the exception, however, of mercury in any of its forms. By this course

of treatment we cure the disease before we find have very little of the chronic or ulcerative variety. This brings me to what I call chronic dysentery, which I think is always the result of a degeneration of the acute variety, either from neglect or its improper treatment; for it really always presents ulceration of the rectum, or colon, or both. Diagnosis. Chronic dysentery may be readily distinguished from the acute by the ulcerations found to exist in these organs, the colon and rectum, and by the diminished tormina and tenesmus and by the discharges of muco-purulent matter

from the bowels and may be distinguished from the ulcerative stage of other degenerated fevers by the continuation of slight griping and straining. Prognosis. When the fever of the acute dysentery subsides without signs of convalescence, and when superadded to this, coldness and debility come on, the sanguineous ejections yielding to the muco-purulent discharges which are attended with but little griping and bearing down of the fundament, the gums becoming in the meantime sordid and the fauces aphthous, conclusively showing the chronic or ulcerative form, which

delirium slowly creeps on, the nose becoming cold and sharp and the perspiration somewhat chilled, the patient is in imminent danger; and as all the symptoms at this period so closely resemble those of other ulcerations of the bowels after other degenerated fevers, we use the same treatment for this as for the ulcerations following them, looking at this disease in its chronic degeneration as analogous to them. Chronic Dysentery is not always attended with symptoms of such severity at its onset, but if suffered to continue, the result will often be the same; that is to say, death for the

most part close the scene. Treatment.
On this subject I do not think it
necessary to dwell long, Experience
having taught me that there are
but few medicines that will be
found availing to much extent
in this Extreme asthenic condition
of the body and chronic or ulcerated
state of the bowels in the dangerous
condition before stated. The best, because
the far more successful, remedies
that I know of are nitrate of Silver,
Chloride of Soda, Opium in some of
its forms, Ipecac, Oxide Zinc, Sulphate
of Zinc, Acetate of Lead, Camphor,
Quinia, Kino, Catechu, the Extract of

Logwood, the Extract Matanica,
Balsam copaiba, the Subnitrate or
Subcarbonate of bismuth; all these may be
included among the remedies supposed
to act by coming in contact with
the affected parts. This last remedy
is often beneficial as a palliative, the
ejections becoming less frequent, with
relief of pain, etc. under its use. It should
be given in doses of from 2i to 3ss,
three or four times daily. Sulphate
of copper in small doses, given with
great caution, is also recommended among
the tonic astringents to be used in
this disease. Sinipisms and blisters
may also be indicated, also brandy or

Dr. C. Using the above remedies in their various and several combinations, as the exigency or the nature of the particular case may require, in connection with a bland diet, such as rice water, arrow-root or other farinaceous preparations, chicken water, Iced rice water, or beef tea in the feeblest cases; and, when there is great thirst, the infusion of Slippery Elm bark or a solution of gum acacia made cool with Ice, or an Iced mint Julep or two in the course of a day as the case may be. My own success with that of others has been quite flattering.

An

Inaugural Dissertation

on

The Circulation.

Submitted to the Examination

of the

Provost, Regents and Faculty

of

Physic,

of the

University of Maryland,

for the Degree of

Doctor of Medicine.

By

James G. Wiltshire

of

Virginia.

Session of 1868-69

[illegible]

[illegible]

[illegible] your decision, out-

ly way of expressing my humble views

upon the subject, will assert that

I can, with my unpleasant remem-

brance of past embarrassment, give

[illegible]

by our distinguished Professor of

Pathology. -

Now to remove this injurious or ob-

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] the most remarkable

[illegible] in the animal economy —

189 [illegible] circulation we [illegible]

stand to [illegible] by [illegible]

the tissues of the [illegible] aggregate

[illegible] & nourished by the blood, [illegible]

of [illegible] through the medium

of their appropriate channels, whether we will discuss briefly as

progress is made. This distribution is usually denominated [illegible]

[illegible]

the Elixir of immortal fame by an

[illegible]

[illegible]

[illegible]

[illegible] that the arteries contained

a [illegible]

[illegible]

[illegible]

[illegible]

[illegible] has been y subsi-

[illegible] found to consist

[illegible], Album & the various sots

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] limited time & space

To make the process of [illegible]

bodies are nourished & trained

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

in [illegible] connected by [illegible]

[illegible]

[illegible] between the two systems,

[illegible] part of

Providence for the sake of economy

of space & material —

[illegible]

[illegible]

of the circulatory apparatus
since it is in the thorax, surrounded
(encased) by a membranous sac, the
pericardium. It is often inclined to
left side, touching the walls of the
chest, between the fifth & sixth
ribs. The latter is the first
division of the circulatory apparatus
there are three other parts, viz;
the arteries; a series of branching
cylinders, whose office it is to receive
blood from the heart & distribute
it to the tissues of different parts.

of the [illegible] - [illegible]

[illegible] the capillaries a [illegible]

[illegible] of minute anastamos-

[illegible] constituting the extreme

radicles of the arteries & veins,*

by microscopic observation & minute

[illegible]

intercession with the substance of

the tissues for the purpose of bring-

ing the oxygenated blood in imme-

diate contact with the cells of

which [illegible] are composed.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] will take up this important question in treat[illegible] of its anatomical relations. We will first consider briefly the anatomical structure of the complete Mammalian heart. It is an organ [illegible] muscle of an irregular pyramidal shape, with its base looking up[illegible] apparently is, at the [illegible]

it is suspended, as it were by the
vessels in the middle mediastinum
& surrounded by the pericardium
[illegible] can is hollow with-
in & divided by a septum
into sides, & these are, by a valvular
arrangement, subdivided into two
cavities for each side. For the right
side are here the right auricle &
[illegible]

[illegible] - [illegible]

to its ventricle, when it is sent into the

aorta by the systole of the ventricle. —

[illegible]

[illegible] the cardiac [illegible]

[illegible]

plished by alternating contractions

& relaxations of the muscular portion

of the heart, so that at every im-

pulse [illegible] of the

blood are received by the auricles,

delivered to the ventricles through

[illegible]

by ____ [illegible]

[illegible] [illegible], are capable + uniform[illegible]

manner; First after the impulse

already received from the contrac-

tion of the left ventricle, the elastic-

ity of the [illegible] [illegible] + [illegible] ex-

isting in the middle coat, with the

contractility of the same, which it has

been shown to possess, are promi-

nently concerned in resisting + reg-

ulating the flow of blood towards

particular organs; the second or

intermittent [illegible] by [illegible]

pities arise [illegible] [illegible] [illegible] &

[illegible] [illegible] [illegible] [illegible]

[illegible] as [illegible] you

concerned in the [illegible] of

the same object.

The prolong the [illegible], for example, [illegible]

[illegible] [illegible] the center

of the earth, and this is modified by

the relative distance from that organ,

[illegible], both in volume & the period of

time intervening between the earlier

impulse & its perception at part

more or less remote.

AN

Inaugural Dissertation

ON

Typoid Fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

David H. Turner

Of

Baltimore, Maryland

Session of 1869

Gents:

As it is required of our students to write a dissertation on some subject, I have chosen for mine, one in which the mind has full scope; and if I should fail to meet your expectations; I trust you may overlook the many mistakes of a student, who is, of course but a novice in the science. Without further remarks, I will commence my subject, [illegible]

[illegible]

Many times pain [illegible] in the sides, chest & abdomen, also the upper part of the chest and neck. The nervous symptoms are become more marked, the patient suffers [illegible] headache, dizziness and ringing and singing in the ears, the tongue is disposed to tremble when protruded, which is accomplished with much difficulty. As the disease continues to advance, the tongue becomes dry, with sordes upon the teeth, gums, and lips. Sometimes is dry and parched;

But in more protracted cases, the tongue throws off its fur coating in flakes, commencing generally in the centre & towards its base, leaving the surface smooth and shining. In this condition of the tongue, that is fauces of the fauces and the half arches are covered with an exudation, which it begins to part with and under these circumstances, you may look out for numerous functions. The [illegible] [illegible]

the tongue coats slightly over,
and then becomes clean. But
if the moisture continues,
and a thrush like Exuda-
tion makes its appearance,
the Prognosis will be
Favourable. But, sometimes,
the Intestinal mischief sets
up, and the tongue becomes
dry, and, then there is much
danger to be apprehended.
The patient is generally
restless, even, in Cholera case,
with violent pains in the
abdomen, [illegible]

ease, which produced in-
flammation in the Peritoneum.
Sometimes perforation of the
Intestines takes place, as
early, as the twelfth day,
and even as the fortieth.
In an unusual case of
Typhoid, death may take
place on the 7th day,
but, generally it runs its
course longer. The [illegible]
of Typhoid is so frequent
that, it is considered a
diagnostic symptom; although
there may be cases, where ...

on the abdomen, and extending sometimes to the breast and on the extremities. They [illegible] is [illegible] to distinguish them from the petechiae, [illegible], do not disappear upon pressure, nor project above the surface, and is also more common in Typhus Cases. The next common symptom, is Tympanitis, which is a constant attendant of Typhoid Fever. It comes on about the tenth day, sometimes sooner. In some cases, the distention is very great, so much so, that [illegible]

there is a venous [illegible] [illegible]
of all the secretions. [illegible]
You should be very careful in
giving even Quinine; as the
most simple Case of Typhoid,
may terminate fatally. The
most prominent symptoms of an
[illegible] case, is the notion
of the Patient; that nothing
is the Matter; then profound
Coma, excessive Subsultus
Tendinum, rigidity of the
limbs, stertorous Respiration,
[illegible] [illegible], [illegible]
[illegible]

and under the circumstances
use Atropine. In
cases of sudden prostration,
with coldness of the surface,
hot brandy and Strych-
nine may be found
very useful; also keep the
surface with mustard, or hot
whiskey & vinegar & water.
When Epistaxis becomes trouble-
some with the use of astrin-
gents, plugging the nostrils
is the last resort. Hemorrhage
from the bowels should
be arrested with [illegible]

very digested. You mention fine old Lemonade, &
tea, cocoa & Mullet on leg,
milk punch and wine whey.
If the stomach should be too
irritable for the above diet,
then ice will be found
a good addition. With these
few brief remarks on Night-
Sweats & Habits of Consumption
which should be treated with Min
acids et Quinine. I submit
my subject to the Faculty
Board of the University of
Maryland: